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MYXŒDEMA IN THE HORSE.

BY PROFESSOR O. C. BRADLEY, M.R.C.V.S., NEW VETERINARY COLLEGE, EDINBURGH.

IN the veterinary literature within my reach, I am unable to find a record of a case of this disease occurring in the horse. This has induced me to report the following case, the facts of which are somewhat incomplete.

The subject was an aged chesnut mare, 14 hands high, which had been bought in the public market of this city (Edinburgh) for purposes of dissection. This being so, no previous history could be obtained.

The animal was kept for two days and then destroyed. Whilst under observation, the following symptoms were noticed :—There was the appearance of considerable obesity, the hair was long and coarse, the skin felt thicker and drier than normal, and if the face had been that of a human being, it would have been described as "bloated." The mare was very listless, moving with great reluctance, and the appetite was impaired.

On *post-mortem* examination the following features were observed :—The skin was thickened, particularly on the trunk and about the head. Subcutaneously there was a large amount of flabby tissue closely resembling fat, from which a yellowish gelatinous fluid exuded. This œdematous tissue was mostly seen over the trunk, head and neck; the limbs did not contain so much. The muscles were flabby, "watery," and paler than usual. *The thyroid body was extremely atrophied.*

On cutting into the abdominal cavity, its walls were found thickly coated with flabby tissue, similar to that noticed subcutaneously.

There was a large irregular tumour completely covering the lower surface of the left kidney, and the abdominal portion of the psoas muscles, and extending into the pelvic cavity. This tumour, on section, was yellowish in colour, showing small softened portions. The left kidney was very friable, and its pelvis contained a jelly-like semi-fluid substance.

The bladder contained a moderate quantity of apparently-healthy urine. The liver was pale, and on section minute drops of oil adhered to the knife. The lungs showed a certain amount of congestion, and emphysema of the anterior lobes, which is usually met with in old horses. The other organs were anæmic, but otherwise healthy.

On microscopical examination, the abdominal tumour was seen to be sarcomatous in character, and to be undergoing slight mucoid degeneration (myxomatodes). The diseased kidney (left) was affected with colloid degeneration, a large number of its uriniferous tubules being plugged and distended with colloid material. The liver was infiltrated with fat to such an extent that the hepatic cells were almost entirely supplanted.

My reasons for considering the above to be a case of myxœdema are:—

(1.) In the human subject it is a disease of frequent occurrence, as evidenced by the numerous cases recorded in the medical periodicals; the symptoms resembling those I have given above.

(2.) The thyroid body or gland was atrophied, and it has been found that where this body has been removed by operation in the human subject, or experimentally in the lower animals, a condition ensues which, if not myxœdema, at least very closely resembles it, this condition having been named by Kocker, *cachexia strumiprira*.

(3.) The sarcomatous tumour was undergoing commencing mucoid degeneration.

(4.) Colloid degeneration had taken place in the kidney, and mucoid and colloid degeneration are so closely allied as to be described together by Cornil and Ranvier* and other pathologists, Payne† inclining to the opinion that colloid is a mixture of mucin and albuminates in various proportions.

(5.) The subject was a female: in human medicine the female is usually affected—in fact, Sir William Gull, who first

* Manual of Pathological Histology. Cornil and Ranvier.
† Manual of General Pathology. Payne.

observed this disease, called it "a cretinoid condition of adult women."

(6.) In women, again, it does not appear until middle life has been reached. The mare in question was aged, but may have had the disease for some time.

Myxœdema has been successfully treated by the hypodermic injection of extract of thyroid body, and by feeding with this body; but how this cures the disease has not been satisfactorily explained, as the extract or injected body can scarcely be considered to have the same effect on the blood as the living gland has.

As regards the normal weight of the thyroid in the horse, I may state that in the animals dissected here during the present session it has varied from six to ten drams, this being in horses ranging from 13 hands to 15 hands 2 inches in height, and from light to moderately heavy in build.

NEW TOOTH SHEARS.

BY J. M. CRAWFORD, M.R.C.V.S., YARM-ON-TEES, YORKSHIRE.

I HAVE much pleasure in bringing before the profession my new Tooth Shears. The advantages to be derived from using them are: they do away with any liability of fracturing the jaw, or starting the fang of the tooth, because of the equal pressure brought to bear on the posterior as well as the anterior aspect of the tooth, in the act of cutting it; the animal does not suffer, and no after-treatment is required, as a rule, as the cut is generally a clean one.

Messrs. Arnold and Sons, London, are the makers, and have now a supply on hand. They will also supply purchasers with particulars how to use them.

THE TRIGEMINAL NERVE OF THE OX.

BY PROFESSOR J. T. DUNCAN, M.D., ONTARIO VETERINARY COLLEGE, TORONTO.

THE formation of the trigeminal nerve and its general distribution are similar in the horse and ox. Its three divisions, however, emerge by different routes from the skull. In the horse, the ophthalmic nerve makes its exit by the *foramen lacerum orbitale*, the superior maxillary nerve by the *foramen rotundum*, and the inferior maxillary nerve by the *foramen lacerum basis cranii*. In the ox, the two first-named divisions pass together through the large common foramen (which in the ox takes the place of the pathetic, the round, and the lacerated foramen of the orbit), while the inferior maxillary nerve has for its means of exit an oval foramen in the wing of the splenoid bone.

It is only the distribution of the first, or ophthalmic division of the nerve, that will be mentioned in this note.

IN THE HORSE.—This nerve, on reaching the orbit, breaks up into three portions, viz. :—Supra-orbital or frontal, lachrymal, and nasal.

Supra-orbital Division.—This is a large branch. It passes through the supra-orbital foramen, then divides into branches, which are distributed to the skin of the forehead and upper eyelid.

Lachrymal Division.—This goes chiefly to the gland of that name. It also gives off a branch to reach the skin over the temporal fossa, one branch also running external to the zygomatic process to the anterior auricular region. The lachrymal does not supply the muscles of the eyeball.

Nasal Division.—One branch of this re-enters the cranial cavity through the internal orbital foramen; the other (palpebral) going to the nasal angle of the orbit and the lower eyelid.

IN THE OX.—*Supra-orbital Division.*—Large as is this branch in the horse, no filaments can be traced through the supra-orbital foramina of the ox. But the place of the supra-orbital proper is taken by a very large branch going directly to the base of the horn. This branch (the head being placed in the horizontal position) passes backwards and outwards, beneath the supra-orbital process. Guarded by the projecting edge of the frontal bone, it runs under it, nearly to the root of the horn. Here it divides, some of the filaments passing anteriorly, some posteriorly, and they can be traced almost to surround the horn-core. Other filaments pass directly into the porosities of the bone.

Lachrymal Division.—This branch is represented by a large number of filaments. These were traced into the "majority of the muscles of the eye." Other filaments passing outwards were traced towards the gland.

Nasal Division.—This branch is distributed essentially as in the horse.

The principal point of difference is seen to be in the course of the supra-orbital or frontal nerve. Dehorning is now so common that it is of importance to know the course of the nerve reaching the part operated on.*

ON THE TREATMENT OF INFLUENZA IN THE HORSE.

BY E. WALLIS HOARE, F.R.C.V.S., CORK.

Of all the affections coming under the notice of the town practitioner there are, perhaps, none so frequent in occurrence as influenza cases complicated with thoracic lesions.

At certain seasons, when young horses are imported from the pure air of the country to the close and often ill-ventilated stables of the town, we find such cases in abundance.

In such affections the practitioner has generally great opportunities of observing and studying the clinical phenomena, and the course, duration, and termination of the cases, and the therapeutical effect of the remedies employed. Each case of severity requires daily attendance to watch its progress, and to combat the various complications which are likely to arise. It is not surprising, then, for great differences of opinion to exist with reference to the treatment when we consider the variety of phases which the affection may undergo, and when we become convinced that it is impossible to lay down a hard and fast rule for the treatment of all cases; but rather that each case should be treated according to the symptoms observed, and the condition of the patient.

We know that almost every year there is a difference in the character of the affection. In some years we find that laryngitis and bronchitis are prominent symptoms; in others pneumonia prevails; while in others, again, there are evidences of severe cardiac disturbance.

Then we have the abdominal form, characterized by symptoms of gastro-enteric irritation, and that form accompanied by cellulitis, popularly termed "Pink Eye"

* The excellent dissections, the results of which are embodied above, were chiefly made by Professor Sweetapple, of the Ontario Veterinary College

There are two main points in which practitioners differ with reference to the treatment of Influenza, complicated with thoracic lesions.

1st. The question of the administration of stimulants;

2nd. The employment of counter-irritants to the thoracic walls.

We presume that all are agreed as to the vital importance of proper hygienic surroundings for the patient, and attention to the details of nursing. There are few, indeed, who would not place ventilation, drainage and nursing as of first importance, and without which therapeutic measures if not inert, are at least subordinate. The proper attention to careful feeding of the patient and tempting his appetite, cannot be lost sight of, as we know that so long as the animal feeds well his condition is far more hopeful than otherwise, and that when we have to resort to mechanical feeding the case assumes a critical form.

The question of the administration of stimulants is one of great importance. We find, on the one hand, eminent authorities denying their use or value, and, on the other hand, there are authorities quite as eminent who uphold their usefulness.

In former years, when depressants and venesection were the chief agents employed, we know full well the amount of mortality which ensued. A directly opposite line of treatment was indulged in, and in the effort to cut short the course of the disease and its probable cause, the patient often succumbed to the effects, not of the disease, but of the treatment employed. To make a broadcast statement that stimulants are not required or are not useful in Influenza cases, is tantamount to a statement that counter-irritation is of no value in all cases.

There are many cases which require stimulants, and require them early; and others which can very well do without them. Take a case of Influenza in a strong, good conditioned horse, which, although offering a high temperature, yet has a fair pulse and feeds fairly well.

To administer stimulants in such a case is not only useless, but harmful.

The pyrexia can be reduced by the use of saline febrifuges in the drinking water, and attention to hygiene, etc., is all that is needed, unless some complication arises.

But take the case of a horse which has been worked until the driver notices him off his feed, or finds him dull and heavy at work; perhaps he may still be worked, owing

to ignorance of the existence of the malady, until no longer able to do so. In this case there is high temperature, and great debility in addition. The appetite may be completely lost, and early lung complications may occur.

The judicious administration of stimulants in such a case is soon followed by a visible improvement.

In combination with diaphoretics and febrifuges, such as Spt. Æth. Nit., and Liq. Ammon. Acet., we find the temperature becomes diminished and the appetite returns.

It is absurd to say that either the animal should be left to itself, when it will neither take food or drink medicated water of its own accord.

It would be still more absurd to pour fluid nourishment down its throat.

Judging from personal experience of the depressing effect of Influenza, both on the appetite and on the nervous system, we certainly cannot be surprised that horses will not feed in many cases, and that debility is a frequent accompaniment.

We would, without doubt, strongly object to have gruel or other fluid forms of nourishment poured down our throats when the appetite is lost, and when, as often occurs in the catarrhal form of the affection, there is complete loss of taste.

The beneficial effects of the judicious use of stimulants in such cases we have experience of in ourselves, as the appetite gradually returns, and the depression of the nervous system passes off.

And it is not unreasonable to suppose that the cause of the loss of appetite in horses, in addition to the nervous depression, is due in part also to the loss of both smell and taste.

It may be asked in what way do alcoholic stimulants produce beneficial effects when judiciously employed? To answer this it is necessary to be acquainted with the physiological actions of alcohol.

Like all other drugs in the Pharmacopœia, alcohol has its definite actions in medicinal doses, and if the administration is pushed beyond these we have a different train of effects.

Every stimulant, if pushed to excess, becomes a depressant, and alcohol is no exception to this rule.

We may first consider the action of alcohol as a stimulant. A moderate dose stimulates the circulation in every part of the body, the action of the heart is increased in force and frequency, and the peripheral blood-vessels are dilated.

This general stimulation is brought about both by reflex

action from the mucous membrane of the stomach, and also by a direct action on the nervo-muscular structures of the heart, the naso-motor centres, and the nervo-muscular tissue of the middle coat of the vessels.

We may next consider—(*a*) Alcohol as a food, (*b*) Alcohol as a nutritive depressant.

The question as to whether alcohol can act as a food is one in which some differences of opinion have existed among certain circles. But eminent authorities, after careful investigations and experiments, have decided that when given in sufficiently small doses alcohol becomes oxydised in the tissues; and that if given in larger amounts it passes off unchanged by the lungs and kidneys. Experiments have also decided that alcohol does not become an integral part of the living cells, but that it remains in the plasma, is oxydised there, and constitutes their pabulum. We are also aware that, in proper doses, alcohol favours gastric digestion by stimulating the mucous membrane of the stomach, dilating the vessels, increasing the flow of gastric juice, and the movements of the organ.

The next action of alcohol which we have to notice is that of acting as a nutritive depressant.

We have just stated that alcohol in moderate doses is oxydised in the tissues, but it has also a special action in interfering with the metabolism of the tissue proteids.

This action has been proved experimentally, by allowing moderate doses of alcohol to animals, with the result that three facts were arrived at:—

1st. That less oxygen is absorbed;

2nd. That the temperature falls, and the albuminous tissues tend to degenerate into fat;

3rd. That there is a diminution in the excretion of urea, carbonic acid, and salts. The action of alcohol on the blood seems to be that it has the power of binding the oxygen more firmly to the hæmoglobin, with the result that oxygenation of the tissues is diminished.

It is also supposed that alcohol, when it reaches the tissues seizes upon the oxygen itself, and thus interferes to a certain extent with metabolism.

From the above brief sketch of the actions of alcohol, we can understand its beneficial effects when judiciously administered in cases of Influenza.

It prevents the great tissue waste occurring, reduces the temperature, sustains the heart and nervous system, promotes the appetite, and causes equalisation of the circulation

throughout the body. It is the irrational use of alcohol which must be deprecated, such as its being administered in large and repeated doses when not required, as then not only is its effect hurtful to the patient from its physiological action on the system, but there is the worry to the patient from the continual drenching when quietude is indicated.

In cases in which, because of severe laryngitis, fluid medicines are with difficulty administered, and even attended with danger, we often are in a dilemma to know what agents are best to use. In the form of an electuary, doses of Ext. Belladonna with Potass. Chlor. and Quinine, have a very beneficial effect, and are readily taken by the animal by placing between the molar teeth.

In cases characterised by high temperature and great debility, the action of a few large doses of Quinine are of great benefit, and besides reducing temperature, the action of this drug in acting as an internal antiseptic cannot be lost sight of.

(To be continued.)

BOVINE FŒTUS AFFECTED WITH HYDROCEPHALUS.

BY VETERINARY-SURGEON DESMOND, WARRNAMBOOL, VICTORIA, AUSTRALIA.

THE following notes on an interesting case may be of value in placing on record a remarkable abnormal condition of the head of an unborn calf. This remarkable abnormality was received by me in December, 1891, from the dairy farm at which I treated the outbreak of epizootic abortion reported in the VETERINARY JOURNAL for November last.

The following notes are the particulars, which are as complete as can be made without dissecting the head, a proceeding which would destroy its value as a specimen. The head alone was brought to me in a sack, and had an incision in its most prominent part of more than six inches long, which, I am told, was a cut with a butcher's knife made to see what the head contained.

These are the facts related by the owner of the dairy farm. The cow was of a very common breed, and the fœtus was the second calf; the first calf was healthy, and was born without assistance.

The cow was irrigated with the others in the treatment pursued for stamping out the outbreak of epizootic abortion, and was one of those whose genital organs admitted the full length of the pipe.

Symptoms of pregnancy were noticed about the seventh

month, but after a few days they subsided, when the hair appeared to be rough, and the animal out of condition, with a faint trace of the pelvis becoming smaller. After a few weeks the cow was noticed to be very swollen in the flanks, in fact, abnormally swollen; the vulva was contracted, and the anus drawn in. This puzzled the owner very much, as the cow had gone beyond her time to calve. The cow became so large that an opinion was formed that she must have twins. The animal was kept under observation in a small paddock near the house, in case assistance would be required. While under observation the cow did not seem to suffer any pain, and partook of her food in the usual manner.

The owner was much surprised on going one morning to see how the animal was, to find her dead. Death seemed to have taken place without a struggle. He at once decided to remove the hide and cut up the carcase to ascertain the cause of the phenomenon, and then burn the remains; burning is resorted to in all cases of death on the farm, as a means of preventing the spread of contagious diseases. After removing the skin, an opening was made in the flank, as the cause of death appeared to be in that region, through its being very much swollen; and he was surprised to find a large quantity of clear fluid in the uterus, estimated to be not less than fourteen gallons. When he had opened up the flank sufficiently to see the calf, he was struck with the size of its head. It was a male calf, and in a natural position. When he had taken the calf out, he ran the knife across its head and found a clear fluid exactly resembling that in the uterus. The calf, with the exception of the head, appeared to be like any other calf, and did not seem larger than one dropped at full term. After the calf was examined, the cow was cut up to facilitate its burning, the carcase of the calf being thrown upon the heap, dry wood piled on top, and the whole set fire to. The fire had been burning for some time when a neighbour, the same who brought me the head, came over to see the cow, and was so much interested in the strange appearance of the head of the calf, which the fire had not yet reached, that he took up an axe and severed the head from the body just behind the ears. When the farmer was asked why he did not keep the cow and the calf for me to examine, he replied, "I was disgusted with my losses, and thought that some new disease was going to break out in my farm."

The following is a description of the head, with measurements:—

The colour of the hair is red on the lower part and

white on the upper part; and the hair is much longer and stronger than is usually seen on a calf at full term.

FRONT VIEW OF HEAD OF CALF.

The shape in that portion of the head which is abnormal approaches a spheroid, the largest surface being the top. The bones in the abnormal portion appear to be one-eighth of an inch thick, and they terminate with the red-coloured hair (as indicated by the dark shading in the accompanying illustration), where they are very thin and more like cartilage, with an undulating edge—that is, high in the front, running up to a point, with a base 4 inches wide opposite the nose, then for 5 inches running upwards to the highest point at the sides.

There is a V-shaped cleft at the back, with a measurement of—top, $5\frac{1}{2}$ inches; sides, $5\frac{3}{4}$ inches. Diameter across the head from front to back is 12 inches, and from side to side at widest part 15 ins.

SIDE VIEW OF HEAD OF CALF.

The following are the measurements of the stuffed specimen, as shown in the plate:—From bottom of lower jaw to top of head, taken at an angle from upright position, 18 ins.; from front to back, 14 ins.; from side to side at widest, 18 ins.

The most curious features are the forehead, with its rough

curly hair appearing to be at the back of the head, and the ears which, although they look forward, are upside-down. A dissection is the only means of telling if the bones at the back which look like the forehead are really the bones of the forehead or not. The front teeth are very large for a fœtus, the middle teeth measuring across the upper surface half-an-inch. The mouth is complete, with teeth, tongue, palate, and pharynx normal; the œsophagus and trachea are to be seen in a normal position. While the eye-lids with long eyelashes are perfect, the eyes are rudimentary and sunk below the bottom eyelids. The measurement across the eyes from the anterior edges is 8 ins. The ears are large and long, measuring 2½ ins. broad and 4 ins. long from base to tip. Measurement from tip of nose to base of ear, 9 ins.

Description and measurement of the cranial cavity: On viewing the inside of the head, what comes prominently into view is the end of the spinal cord, which has the appearance of a number of fine woollen threads of irregular lengths, some 3ins. long, others not more than half-an-inch. Dura mater and pia mater intact; no trace of brain to be seen. The membrane lining the cavity is perfectly smooth, and of a dull colour.

No trace of the optic nerves can be seen; in fact, the membrane is as smooth as a dried bladder.

On the floor of the skull, at the point where the spinal cord passes through, is a triangular cavity that would hold about 8 fluid ounces, with sides measuring 5 inches; it is formed by a thin membrane extending from a rounded point facing the anterior aspect and running upwards, joining the head at the back; the walls of this membrane are 2 inches high.

The specimen measures from the bottom or floor, at an angle, to the top of the undulating edge of the bones, at the highest part, 16 inches; from the lowest part in the V-shaped cleft in the back part of the head, 18 inches. In giving these measurements it is to be noted that the back part of the head is lower than the bottom jaw.

The following measurements may serve to gauge the capacity of the head: From floor of cavity to top of head, distended, 16 inches; diameter at widest part across the head at the highest point of the bones, 18 inches. Taking the diameter at the part above-mentioned will give a fair average, as the base is smaller than the top; the top part of the head, above the bones, projects forward when it is distended with fluid. The cavity holds between 4 and 5 gallons of fluid, but to arrive at a very exact measurement it would be necessary to resort to displacement.

Editorial.

ABORTION IN CATTLE.

It will be observed from the report of the last monthly council meeting of the Royal Agricultural Society of England, which appears in our present issue, that it was determined to apply, at the instigation of the Veterinary Committee of the Society, to the President of the Board of Agriculture for assistance in carrying out an experimental investigation into the cause or causes of Epizootic Abortionin Cattle, with a view of discovering remedies of a reliable and efficacious kind. In the memorandum in which this request is conveyed, it is stated that the cause of the affection has never yet been definitely ascertained, and consequently there is no degree of certainty attaching to any of the remedies that may be applied. Yet it is admitted that practical men entertain no doubt that the disease is either infectious or contagious, and it is asserted, we suppose in support of this opinion, that during an inquiry instituted by the Highland and Agricultural Society a few years ago, "five distinct organisms were stated to have been separated from the vaginal and uterine discharges," from affected cows, we presume.

Of the necessity for discovering some means of checking the spread of abortion among cattle in this country there has for a long time been a strong opinion, and it is difficult to understand why measures should not have been adopted years ago. There is the most convincing clinical and experimental evidence that this epizootic abortion of bovine animals is of a communicable character, and such evidence has been before us for at least the past twenty years. There are also facts to show that in outbreaks in which preventive measures based on this knowledge are applied, the disorder can be checked.

Instead, therefore, of wasting time and money in hunting after the special micro-organism among a number, which organism may after all not be found, or if discovered may be enveloped in as much doubt as surrounds the one that produces cholera morbus, would it not be more reasonable and profitable to issue instructions as to prevention, the steps to be adopted being already sufficiently indicated by the principal features of the disease? Instructions issued to agriculturists and to veterinary surgeons practising in districts where the complaint is prevalent, would at once be followed by

certain results, and this course will have to be adopted, whether the occult micro-organism which causes the mischief surrenders itself to observation or eludes pursuit.

It appears to be accepted that because the organism which occasions a disease is not discovered, therefore nothing can be done to stay the ravages of that malady. That this is a mistake the history of animal plagues abundantly demonstrates; and while no doubt it gratifies a laudable curiosity to be able to exhibit in the microscope a something which is supposed or proved to be the origin of disturbance, yet it must be remembered that such an exhibition is not essential to the successful encounter with a contagious disease, and that during the search for the aggressor, valuable time and property may be lost which might otherwise have been saved. What we should like to see, instead of this microbe-hunt, which can certainly be carried out in the laboratory, would be proper measures carried out on farms and in dairies where abortion is frequent, and where preventive and suppressive treatment can be most satisfactorily tested. This, we are convinced, is the proper course to follow, and it might have been adopted a dozen years ago.

LOAM FOR HORSES.

THE value of good clean dirt as a partial diet every day for high-class horses, says the *Mark Lane Express*, is the latest thing advocated in the United States, its chief supporters being the owners of well-known trotting stock and Hackneys. In describing the management of his stables, Mr. J. Malcolm Forbes, the owner of the celebrated trotting mare, Nancy Hanks, and also of Arion, speaks out very strongly on the point, his opinion being given as follows:—

"My horses stand on loam; they eat it; they sleep on it. Mother earth is the best specific for a horse that I know of. Give a horse plenty of air and light, plenty of exercise, plenty of the right kind of food, and plenty of clean loam to eat and he will always be in good condition. That is the secret of the success of Kentucky bred horses. The Blue Grass region is famous for its horses, but I firmly believe that it is the good Kentucky dirt as much as the grass, that is the secret of their success in horse raising. There are not many who realise how much dirt a horse eats in the course of a day. Why, it is not at all an uncommon thing for a horse to eat a good-sized cupful of earth in a single day. He needs it to stimulate his digestive organs just as much as a fowl needs gravel. Keep a horse away from dirt, shut him up in a stall with board foundations, and he will quickly get out of condition. My stalls are constructed on this plan: For the foundation I have a thick layer of gravel, and over that I place several inches of clean loam. That is all, except occasionally a layer of straw in extremely cold weather. The gravel serves as a drain for all impurities, and the loam is changed as often as the occasion seems to demand. As soon as it loses its freshness it is removed, and a new layer is spread. As a result of this system, my stalls are kept absolutely clean and sweet without

the use of any disinfectants. There are no unnecessary ornamentations. Such things collect the dust, and keep the air full of impurities. For that reason I have constructed my stables as simple as possible."

It is very evident that Mr. Forbes has found a very cheap bedding for his horses—cheaper even than peat moss litter. But would not the same objections—which come from grooms chiefly—which are made to moss litter apply with more force to loam for bedding?

THE HORSE SICKNESS OF SOUTH AFRICA.

We learn from Cape Town, South Africa, that Dr. Edington had been working hard at his investigations into the nature of horse-sickness, and that early in February he had started on a tour through the Transvaal and other parts of the country, accompanied by Mr. Borthwick, in order to settle the sometimes disputed point as to whether the horse-sickness which prevails in these parts is identical with the disease that was seen in Cape Colony last year. There is a disease of the horse observed in that colony which, for want of a better name, the colonial veterinary surgeon, Mr. Hutcheon, has designated bilious fever, and which has been described as the biliary form of horse-sickness. Mr. Hutcheon is satisfied that, although it resembles the last-named disease, it is, nevertheless, distinct from it. The three forms of horse-sickness he witnessed last year were the purely pulmonary, in which the infection was evidently conveyed through the air passages: the dikkop, or 'big-head form, in which he thinks it finds entrance by the mouth—local inoculation; and the gastro-intestinal form, in which it is carried along with the food to the digestive organs. The so-called "bilious form" is quite distinct from these, and occurs when there is no horse-sickness: besides it is more prevalent on farms close to the coast where that scourge rarely appears.

THE HISTOGENESIS OF THE TUBERCLE OF CHRONIC GLANDERS.

At the *séance* of the Paris Society of Biology, held in January last, Professors Leclainche and Montané, of the Toulouse Veterinary School, brought forward the subject of tubercle formation in chronic glanders. From their description, it appears that the evolution of the tubercle of chronic glanders can be well studied in the lungs of the horse. In these organs they are completely isolated, and as they exhibit different degrees of development, it is possible to recognise and isolate them at their earliest stages.

The initial alteration is an inflammation of the subpleural and interlobular lymph paths, which is particularly intense at the points where the tubercles are about to be developed. The tubercles are always situated in the immediate vicinity of the pleura or the interlobular septa—often at the junction of septa and pleura, or at the point of union of two septa. From this circumstance it happens that the tubercle is sustained and partially limited by a band of inflamed connective tissue.

The primary stage of evolution of the tubercle consists in the development of a focus of exudative fibrinous pneumonia, occupying a more or less considerable portion of a lobule.

The corresponding pulmonary alveoli are filled with a mass of yellow granular fibrin containing some mononuculated leucocytes. The pleura or the connective tissue septum, is infiltrated with an enormous quantity of leucocytes, the lymphatic vessels are seen to be dilated, and some of them are literally crammed with leucocytes. From this time the subpleural tubercles appear in the form of a small ecchymotic spot, somewhat of a regularly rounded form.

At a more advanced period, the central part of the primary focus of pneumonia is invaded by a brisk immigration of leucocytes, that infiltrate the walls and fill the alveoli, which, on section, look like a highly-coloured cluster of grapes. At the same time the pulmonary tissue undergoes reactionary modifications in the vicinity of this focus; this limiting zone is indicated by the evolution of a more or less extensive epithelial pneumonia.

The superficial tubercles now appear as a rounded mass, grey in colour, transparent and homogeneous. They are composed of a very soft tissue of a fleshy consistency. Sometimes a trace of the primary ecchymosis persists at the periphery in the form of a reddish aureola.

In the third stage, the central part has undergone caseous degeneration, which has affected at the same time the alveolar walls and the imported leucocytes, while an epithelioïd reaction zone has been established at the periphery. There are then distinguished in the tubercle:—a degenerated, granular and coloured centre, formed by the *detritus* of cells; a middle layer with festooned outline of fibrinous pneumonia; an external layer of interstitial pneumonia, characterised by proliferation of the elements composing the septa and the alveolar epithelium. The cavity of the alveoli is thus progressively effaced by the thickening and drawing together of the walls.

These lesions are revealed on the surface of the lung by round spots of a greyish-yellow colour, which, on careful examination, are found to be constituted by a central portion, which has a dirty white colour, and is contained within a zone of a greyish hue.

At a more advanced period, the zone of interstitial pneumonia gradually gains on the fibrinous zone, and forms a limiting shell around the tubercular centre. The tubercle, thus constituted, only undergoes the ordinary degenerative alterations. The interstitial pneumonia forms at the periphery a compact cellular wall, in which may be distinguished: an internal layer, the thickest formed of large yellowish cells, amongst which it is not rare to find giant-cells; an external layer, not so thick, constituted by bundles of delicate connective tissue, that are separated by round cells with large nuclei; which are embryonic in their nature. The internal zone merits the designation of "epithelioïd," while the external zone is the outline of the fibrous shell.

A last stage is marked by completion of the fibrous and epithelioïd layers, and the adult tubercle is then made up of its three distinct zones: a central, *caseous*; a middle, *epithelioïd*; and an external, *fibrous*. At this ultimate degree only, the tubercle presents the classical characters of a round hardish mass, offering on section a thick shell intimately confounded with the adjacent parenchyma, and a cheesy contents readily removed by scraping.

From this examination it is possible to trace the pathogenesis of the lesions. The bacilli arrive by the lymph channels, and give rise to an abundant leucocytosis everywhere they penetrate. The inflammation is at first limited to the septa, but it soon reaches the parenchyma (*fibrinous pneumonia*); a little later the bacilli invade the alveoli, and, at the same time, there is an afflux of leucocytes into their cavities. The ulterior pneumonia is the consequence of the necrotic properties of the bacillary products (*caseification*), or of the inflammatory reaction of the neighbouring tissues (*epithelioïd and sclerous zone*).

In *resumé*:

The glanders bacilli travel by the lymph channels, and the initial lesion is a perilobular lymphangitis.

The pulmonary lobule is invaded secondarily, from the periphery to the centre; the first anatomical evidence of the tubercle is a nucleus of fibrinous pneumonia. The centre of the inflamed focus is soon the seat of a leucocytary apoplexy, followed by caseous degeneration of the elements and a

peripheral reaction, terminating in the development of an epithelioïd envelope which is thickened by one of connective tissue.

The tubercle of chronic glanders only differs from that of acute glanders, by the bacilli attacking in more isolated groups, and so allowing the formation of a reactional peripheric zone.

Besides this ordinary evolutive type, the lesions of chronic pulmonary glanders present different forms which were subsequently described at another meeting by Leclainche Montané, and which we will refer to in a future number of the VETERINARY JOURNAL.

A NEW TÆNIFUGE FORMULA.

DR. DUBOURCAU contributes an article on tænifuges to the journal *Nouveaux Remèdes*, in which he gives a formula of his remedy for tapeworms in man and animals, especially the dog and sheep. This is an oil and chloroform extract of the male shield fern, which is administered in capsules, and its success has been amply demonstrated. It expels all kinds of tapeworms rapidly and with certainty, and it likewise acts upon other entozoa in a potent manner. No special precautions are required in its use, neither with regard to diet or administering purgatives subsequently, and it is given without difficulty in the capsules.

THE TREATMENT OF COLIC IN THE HORSE WITH ESERINE.

THE *Presse Vétérinaire* for last February has an instructive paper on the use of Eserine in the treatment of colic in the horse. The writer notes that Sibert, in Germany, after ten years' experience, comes to the conclusion that Eserine is an excellent remedy for colic. He does not employ it alone, but precedes its administration by the exhibition of purgatives—such as sulphate of soda, calomel, and aloes. His annual losses from the disease among the animals he treats are from four to seven per cent., which is considered a small mortality.

The statistics of the Prussian army are given for a number of years, and from them it appears that the mortality among the horses treated for colic was, in

1881	.. ..	14·50 per cent.
1882	.. ..	13·50 „
1883	.. ..	8·50 „
1884	.. ..	9·60 „
1885	.. ..	11·25 „
1886	.. ..	10·25 „
1887	.. ..	11·60 „
1888	.. ..	10·10 „
1889	.. ..	13·06 „
1890	.. ..	13·26 „

In 1881 and 1882 the old treatment of the disease was in vogue, but in 1883 and 1884 Eserine was the fashionable drug for the complaint; after that time morphine and pilocarpine gained a high reputation, and Eserine was little heard of. But from the above figures it will be observed that nearly as many horses succumb to colic nowadays as before the introduction of these alkaloids.

The writer states that for several years he has successfully employed pilocarpine and Eserine successively, at intervals of half an hour, the pilocarpine playing the part Sibert assigns to his purgatives, but assuredly with better effect. In cases of volvulus or invagination of the intestine, or when these alkaloids have proved ineffective, morphine in large doses is alone indicated.

THE SPONTANEOUS COMBUSTION OF HAY.

THE *Clinica Veterinaria* observes that up to the present time there have only been hypotheses to account for the spontaneous combustion of hay. Professor Cohn, of Breslau, has recently demonstrated that the heating of hay to such a degree as to give rise to flame is due to the thermogenic action of a fungus, the *aspergillus fumigatus*, which was already known to possess the property of causing sprouting malt to heat, and so to render it sterile. Owing to the respiration of the fungus—this is, the combustion of starch and other hydrocarbonaceous substances it contains, and which the diastasic ferments convert into maltose and dextrine—the temperature is raised to 40°Cent., then the *aspergillus*, acting as a ferment, elevates it to 60°Cent., and at this degree fire and flame are inevitable.

ENZOOTIC CATARRH OF THE VAGINA.

IN the *Clinica Veterinaria* for December, 1892, Professor Baldoni, of the Milan Veterinary School, recorded an outbreak of vaginal catarrh among cattle on a farm in Lombardy. The outbreak commenced four months after the introduction of a new cow, which showed a discharge from the vagina a few days after arrival. When Baldoni's attention was drawn to the occurrence, fifteen of forty-five of the other cows on the farm had been affected with this discharge, which at first was somewhat scanty, stringy, and transparent, but afterwards became profuse and disagreeable. The animals also lost condition, became emaciated, the coat stared, the lacteal secretion was diminished, and the temperature was between 38·1° and 39·7° Cent.

The calves from these cows, and which were calved after normal gestation, did not thrive. The bull which had been consorting with the cows was also in poor condition, and there were ulcers on his penis.

As the malady was deemed worthy of special study, two of the affected cows were sent to the Milan Veterinary School and examined, when the mucous membrane of the vagina was found congested, and in some places sloughing. They were placed in a stable with a healthy cow, and after four days' cohabitation this animal had the same kind of discharge from the vagina.

When Baldoni again visited the farm a month subsequently, only four of the cows had remained unaffected, while two queys had the discharge like the cows.

A microscopical examination of the vaginal discharge revealed a very large number of fine bacilli, not unlike the tubercle bacilli in stained preparations, along with many micro-organisms of different kinds. Cultures on agar-agar yielded two quite distinct colonies—one white, the other a bright yellow. The upper portion of one of these cultures was removed by means of a sterilised glass rod, and placed in the vagina of a healthy cow. In ten days this animal exhibited the characteristic vaginal discharge. With a portion of this a new culture was made on gelatine, which became liquefied on its surface and was slightly clouded.

From his investigations, Baldoni came to the conclusion that the disease was due to a special infection, and was transmissible through the medium of the air and by contact. In this outbreak the bull was the chief propagator of the malady, owing to his going from one cow to another; but he was not so in all the cases, as the two queys which were affected had not been in contact with him. From this circumstance it was inferred that the disease was not a simple vaginitis, which usually follows parturition and is not communicable. Neither had it any relationship to epizootic abortion for the same reason, and also because all the calves from the affected cows came at full term, and subsequently fecundation was not interfered with.

PARIS ACADEMY OF MEDICINE.

We have much pleasure in announcing that at a recent meeting of the Paris Academy of Medicine, our learned and esteemed colleague, Professor Arloing, Director of the Toulouse Veterinary School, was elected a National Associate by 53 of 55 votes. We sincerely congratulate Dr. Arloing on the great and well-merited distinction conferred upon him by this famous Corporation.

Reviews.

THE PRINCIPLES AND PRACTICE OF VETERINARY MEDICINE. By W. WILLIAMS, F.R.C.V.S., F.R.S.E., etc. SEVENTH EDITION. REVISED BY THE AUTHOR AND HIS SON, W. O. WILLIAMS, F.R.C.V.S., F.R.P.S. (Edinburgh: J. Menzies & Co. London: J. and A. Churchill, 1893.)

A work on veterinary medicine which has reached its seventh edition should surely need no commendation or comment, as its success may be taken as the highest testimony that can be afforded of its intrinsic and extrinsic merits. Professor Williams' treatise has now for many years past been the standard work on veterinary medicine in English-speaking countries, and is recognised as an authoritative guide-book for the veterinary student and practitioner. In the new edition everything has been done to maintain the high reputation and great utility of the work, and the happy co-partnership of father and son in the task of revision (a most unusual circumstance in veterinary authorship) has no doubt rendered the labour less irksome, and thrown more novelty into it. The book abounds in plates and woodcuts to illustrate the text, which is itself much increased and elaborated; so that the present edition presents a very different appearance to the first, and shows more markedly, perhaps, than any other proofs that might be adduced, the continuous and rapid progress made in this section of veterinary science. What might be deemed a special feature in this new edition is the space devoted to the consideration of bovine contagious pleuro-pneumonia and the new malady, the so-called "Corn-Stalk Disease" of North America, about which there has been so much discussion for some time—and which has been brought within the domain of international politics in a rather unpleasant manner, from a professional point of view. Praise of the work would be superfluous, as it has been so often extolled, and in its newer form it will be more highly prized than ever.

HORSES: SOUND AND UNSOUND, WITH THE LAW RELATING TO SALES AND WARRANTY. By J. IRVINE LUPTON, F.R.C.V.S. (London: Bailliere, Tindall and Cox, 1893.)

The subject of soundness and unsoundness in horses is fertile in producing books dealing with it in its legislative, pathological and utilitarian aspects. Mr. Lupton has added one to the number, and has endeavoured to combine the three features just enumerated, and with a good amount of success. He deals with the more important conditions which are regarded as constituting unsoundness, indicating their nature and relative importance. Perhaps the legal portion will be considered the most attractive by veterinary-surgeons, and this part is certainly the most satisfactory; its claim to be considered trustworthy is strong from the fact, mentioned in the preface, that it has been revised by an able lawyer. There are one or two points which, perhaps, every authority on horses would not agree with, and at least one which leaves us in doubt. Mr. Lupton, for instance, speaks of ossification of the coronal band as due to inflammation of that band; this structure is, we presume, from the context, the coronary cushion, though he states that in a healthy condition it is of a cartilaginous nature (?). We must confess we never met with an instance of ossification of this fibro-adipose structure, and this is the first time

we find it mentioned. A large portion of the book is occupied with the consideration of the Contagious Diseases (Animals) Act of 1878, and the prevention of cruelty to animals, though we cannot find much connection between these and soundness in horses. It should be mentioned that there are several illustrations in the book.

THE JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND. (London: John Murray, 1893.)

The last part of this quarterly periodical, issued on March 31st, contains papers which must be interesting and important to agriculturists, but will have not so much attraction for members of the veterinary profession. Indeed, the only item it has pertaining to animal medicine is the Annual Report of the Royal Veterinary College, and though it is mentioned in this that a large body of work had been done in the pathological laboratory of that institution, there is nothing new described. Actinomycosis is reported as having been successfully treated after Thomassen's method; tuberculin was experimented with, with fairly successful results, as was mallein with glanders. Swine erysipelas is also referred to, and it is made to appear that it is only now recognised as a disease of pigs in this country. This is not so, for it has been recognised by various names for at least nearly half-a-century, and to veterinary surgeons, butchers, and pig-dealers it has been familiarly known as the "soldier," and the term erysipelas has also been applied to it. A quarter of a century ago we witnessed a serious outbreak in Kent, and the malady has been referred to in this Journal repeatedly.

Army Veterinary Department.

Gazette, March 24th.

Yeomanry Cavalry.—Cheshire (Earl of Chester's), Veterinary-Major J. Storrar, resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the corps on his retirement. Robert Clowes Edwards, gent., to be Veterinary-Lieutenant.

Gazette, April 1st.

Army Veterinary Department.—The following Veterinary-Captains to be Veterinary-Majors:—George Digby Whitfield, James Kean Grainger, James Joseph Phillips, Benjamin A. N. Powell.

Gazette, April 21st.

YEOMANRY CAVALRY. 2nd West York (The Prince of Wales's Own).—James Brand, Gent., to be Veterinary-Lieutenant.

Veterinary-Lieutenant A. S. Richardson has arrived in England from a tour of service in India, and has been grauted leave of absence.

We are gratified to learn that Veterinary-Captain James Mills, Principal of the Bombay Veterinary School, has been appointed a Justice of the Peace for the town of Bombay by His Excellency the Governor in Council.

Obituary.

T. J. W. DOLLAR, M.R.C.V.S., died at Stockport, Lancashire, on April 5th. He graduated in 1878. The death is also reported of W. Wright, M.R.C.V.S., Tideswell, Derbyshire, who became a Veterinary Surgeon in 1857, and a member of the Royal College in 1880.

The well-known French veterinarian, Pierre Charlier, died at Boult-sur-Suippes, on the 15th March, aged seventy-nine years. Like so many members

of the veterinary profession who have achieved distinction, M. Charlier commenced his working life in the shoeing forge and gained the high position he ultimately reached by honest, earnest, and independent efforts seconding great natural ability. Though known throughout the world as the introducer of a scientific system of horse-shoeing which has done so much to draw attention to the evils attending the ordinary shoeing in vogue, and to the proper management of horses' feet, this formed but a small portion of his claim to the consideration and esteem of his professional colleagues. He contributed largely to veterinary literature, and brought into practice a new operation by which cows could be more safely and expeditiously deprived of their ovaries, the instruments he devised for this purpose being very ingenious.

After graduating at the Alfort School, he entered on practice in Rheims, and subsequently in Paris, where he continued to carry on a very extensive business, from which he retired not long ago to his native town, where he died, and of which he was municipal Councillor.

M. Charlier's services to Science did not pass without recognition and appreciation. He was made Chevalier of the Legion of Honour, a distinction so much prized by Frenchmen; he was also Corresponding Member of the National Agricultural Society of France, Member of the Academy of Rheims, and Honorary Member of a number of Veterinary Societies. He was likewise Honorary President of the French Society for aid to the wounded (Red Cross) and of the Comté de Bazancourt, as well as Cantonal Delegate for the Primary Schools of the Canton of Bourgogne. Full of years and honours, M. Charlier died leaving many evidences of a life well spent.

Parliamentary Intelligence.

HOUSE OF COMMONS, March 27th.

ALUMINIUM HORSE-SHOES.

Mr. FLYNN asked the Secretary of State for War whether the attention of the War Office had been called to the fact that aluminium horse-shoes had been tried by the Russian cavalry with the most successful results; was he aware that they preserved the feet of horses much better than iron ones, as the shoes never broke, that they could be used over and over again, and were only one-third the weight of iron shoes; and whether the War Office could see their way to giving them a trial.

Mr. CAMPBELL-BANNERMAN: My attention has been drawn to these horse-shoes, which have been well tested in the German and Russian armies. The aluminium shoes have several advantages; but it is doubtful whether they preserve the horses' feet better than iron shoes, and their cost is at present prohibitive.

PLEURO-PNEUMONIA.

In answer to Mr. JEFFREYS,

Mr. GARDNER said: The period which occurs between the exposure to infection and the appearance of symptoms of pleuro-pneumonia is ordinarily about 30 days, although it sometimes extends to 90. Instances are on record in which *post-mortem* examinations has shown an animal to have been affected with disease of long standing, the existence of which was not previously suspected, but in these cases it is probable that the disease would have been detected if the animal had been examined by an expert prior to slaughter. In one exceptional case which came under the notice of the professional officers of my department, an animal appeared to have been affected for about a year without being detected, but the ordinary period of the development of the disease is that which I have stated.

Mr. FIELD asked whether the Board of Agriculture would institute a series of scientific experiments with a view to throwing further light on the subject.

Mr. GARDNER: I will consider the suggestion.

CATTLE FROM CANADA.

In answer to Mr. CHAPLIN,

Mr. GARDNER said: The arrangements for the proposed examination of the lungs of cattle landed in this country from Canada are not yet completely formulated, but we shall provide for the inspection of the lungs of all the animals under proper supervision, and for the submission to the veterinary officers of the Department of every case in which there is the least suspicion of disease. The regulations at present in force in Canada prohibit the introduction of animals from the United States without special examination and a quarantine detention of 90 days, and they are only allowed to enter at certain fixed stations. The Canadian Government believe that those regulations are thoroughly effective, and I see no reason to doubt that they afford reasonable security against the introduction of disease. The length of the frontier between Canada and the United States is approximately about 4,000 miles. I am assured that to the best of the knowledge and belief of the Canadian Government no animals are introduced into Canada, by smuggling or otherwise, in defiance of the regulations, and inasmuch as the prevention of the introduction of disease into the Dominion and the privilege of the free entry of cattle into this country are involved, it is obviously to the interest of the Canadian Government to use every means in their power to prevent any breach of the law.

April 13th.

HORSE BOXES ON RAILWAYS.

Mr. GARDNER, replying to Mr. Jacks, said he had no reason to believe that a great amount of disease was spread amongst horses by the horse boxes on railways not being properly disinfected. The cleansing of horse boxes was already provided for by Article 103 of the Animals Order of 1886, a copy of which he should be happy to show to his hon. friend, and if he was in possession of any information pointing to any evasion of the requirements of that Order, he should be glad to receive particulars and to give the matter attention.

April 19th.

INSPECTION OF THE LUNGS OF CANADIAN CATTLE.

In answer to Mr. Leng,

Mr. GARDNER said: I have issued an order prescribing certain regulations to be observed in connexion with the examination of the lungs of cattle imported from Canada. The usual steps will be taken to give publicity to this order, and I shall be happy to furnish my hon. friend with a copy. If it is desired, either by the Canadian Government or the importers, that facilities should be given to enable any veterinary surgeons whom they may appoint to inspect the lungs of any diseased animal, I will endeavour to make arrangements accordingly, but it must, of course, be understood that the lungs will remain under the absolute control of the officers of the Department.

Proceedings of the Royal College of Veterinary Surgeons and Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD APRIL 5TH.

W. J. MULVEY, Esq., President, in the chair.

Present:—Professors Edgar, McCall, Penberthy, Walley, Williams; Veterinary-Colonel Oliphant, Veterinary-Captain Raymond; Messrs. Barford, Beddard, Burnett, Donald, Fraser, Hartley, Hunting, Kidd, Mason, Merrick, Nisbet, Simpson, Trigger, Wheatley, Wragg, Thatcher (Solicitor), and A. W. Hill (Secretary).

Absentees.

The SECRETARY said he had received letters from Veterinary-Colonel Lambert and Mr. Peter Taylor regretting their inability to attend the meeting.

Presentations.

The SECRETARY announced the following presentations to the museum from Mr. J. Roalfe Cox:—An exostosis (os suffraginis) broken off during life; aneurism (post. aorta); intestinal calculus with nucleus; a curious "find" in the stomach of a horse; and an interesting specimen of a diseased jaw.

A vote of thanks was accorded to the donor.

Correspondence.

The SECRETARY read a letter from the Central Veterinary Medical Association, asking whether the fee of one guinea paid for the use of the Council chamber could be reduced.

Veterinary-Captain RAYMOND moved that the fee be reduced to half a guinea.

Professor EDGAR seconded the motion.

Mr. WRAGG said he should like to see every association connected with the veterinary profession meet in their room free of charge, with the exception, of course, of out-of-pocket expenses. Some years ago when that was moved it was decided that a fee of one guinea should be charged for the use of the room, but it was competent for the Council to alter the resolution. As Treasurer, perhaps he ought to vote against any reduction in the fee; but he must acknowledge that the Central Association had been very liberal in its subscriptions towards the building of the College. He would move that the use of the room be allowed for any veterinary purposes, the only charge to be made being out-of-pocket expenses.

Mr. SIMPSON moved as an amendment that the letter be referred to the General Purposes Committee for consideration, and that it report to the Council whether a reduction in the charge could not be made to all societies meeting in that room.

Captain Raymond's motion that a fee of half a guinea be paid for the use of the room by veterinary medical associations was then put, and agreed to.

The SECRETARY read the following letter from Professor Walley:—"I beg to give notice that at the meeting of Council to-morrow I shall ask for information on the following subjects: (1) The meaning of the word 'enter' in paragraph 1 of Alteration of Bye-laws, July 21st. (2) Which subjects will Class A be examined in in May, 1894? (3) Will the published syllabus of the four years' scheme regulate the examination in May next?"

The PRESIDENT said that an answer to Professor Walley's first question was

clearly given in the printed statement which had been circulated, where it stated: "On and after the 7th of September students who enter veterinary schools shall, prior to their first professional examination by the Royal College of Veterinary Surgeons, produce a certificate," &c. It was plain that students entering after September next would have to produce certain educational certificates, and they would not have to undergo any preliminary examination at any of the schools.

Professor WALLEY asked the meaning of the word "entered." If a student came to a veterinary school, passed an examination and entered as a student, was that quite sufficient?

The PRESIDENT said that up to the 7th September they would go on as they had done heretofore; but on and after that date students would have to produce one of the educational certificates as laid down by the clause.

Professor WALLEY asked whether men presenting themselves for examination in May, 1894, had to pass in the three subjects they had already passed in, or would they have to pass in two of them?

The PRESIDENT said that up to May, 1895, they would have to pass in the same subjects as they had hitherto done.

Professor WALLEY asked whether the synopsis issued by the College would come into force prior to the year after next, that was, did it come into force in connection with students who entered next year?

The PRESIDENT said it would only come into force in 1895. Students would not be examined on that syllabus until May, 1895.

Finance Committee.

The SECRETARY read the report.

Mr. WRAGG moved that the report be received and adopted, and that cheques be drawn to meet the liabilities.

Professor MCCALL seconded the motion, which was agreed to.

General Purposes Committee.

The SECRETARY read the report, which recommended that the inside work to the building should be done, and that a sub-committee be appointed to select three or four firms from whom tenders should be obtained.

On the motion of Mr. MASON, seconded by Mr. MERRICK, the report of the Committee was received and adopted, and Mr. Wragg and the President were appointed as a sub-committee to see the necessary work carried out.

The Veterinary Pharmacopœia.

The SECRETARY read the report of the Committee appointed to consider Mr. Donald's motion with reference to a veterinary pharmacopœia, which stated that the committee had come to the conclusion that the College had no power to invest funds in the mode proposed. Mr. Donald had moved to be allowed to withdraw his proposal, which was carried.

Summer Session.

The SECRETARY read the minutes of a conference held on the 27th ult. between committees appointed by the Royal College of Veterinary Surgeons and the Royal Veterinary College for the purpose of considering the advisability of altering the dates for the summer examination of the Royal Veterinary College. Dr. Crookshank stated the views of the Governors of the Royal Veterinary College in favour of the change. After some discussion, in the course of which it was suggested that the winter session, instead of being from October to April, should be September to March, followed by the examinations, thus enabling the students to go into the country

during the foaling season, and to return for a summer session in June and July. The conference was adjourned for the purpose of consulting the Scotch schools as to whether they would fall in with this arrangement, in order to keep the examinations uniform throughout. Pending the result of the application, the conference was adjourned to the 13th inst.

The PRESIDENT said the Committee would have to report to the Council the conclusions arrived at at the adjourned conference. He should like an expression of opinion from the members of the Council as to whether they considered it advisable or not to hold a summer session, whether they were in favour of the suggested alteration of commencing a month earlier and closing in March, and whether it was their wish to hold the examination in the first week in April instead of in the middle of May.

Mr. MERRICK asked whether the heads of the Scotch colleges had been communicated with on the matter.

The PRESIDENT said he had not yet been able to consult Professor Williams, but he had spoken to Professor Walley and Professor McCall, and they would be quite willing to commence their session earlier, and to close in March or April.

Professor WILLIAMS said he should certainly oppose a summer session. He considered it a most peculiar line of treatment to enter into any such arrangement without consulting the other schools. Surely they were as interested in the question as the Royal Veterinary College. He did not understand the thing at all, and had the matter not been adjourned he should certainly have moved "the previous question."

Mr. HUNTING said that Professor Williams had misunderstood the position. It was simply with the object of consulting the Scotch people that the conference was adjourned.

Professor WILLIAMS said he did not blame the Royal College of Veterinary Surgeons at all; but he did find fault with the Royal Veterinary College at Camden Town for having entered into the matter without consulting the other schools.

The PRESIDENT said that so far as their College was concerned, they had absolutely declined to make any alteration without the consent of the other schools.

Mr. HUNTING said that the change in the starting of the winter session was suggested by himself, with a view of trying to get a sort of platform on which they could all work. He mentioned that to show that it was not the Camden Town people who suggested it, and that no agreement was made with them about the alteration. It was simply a suggestion.

Professor WALLEY said it was unfortunate that Professor Williams was not present at the last meeting. He himself had made the remark that, instead of carrying out a suggestion of that kind, it would be far easier to begin a little earlier in the autumn and finish a little earlier in the spring, so as to enable the men to get away for spring practice and get several months' continuous practice in the summer. He thought if they were to commence about the second week in September, they might very well put in two terms of thirteen or fourteen weeks by the end of March or the first week in April.

Professor WILLIAMS asked when the summer session would be.

Professor WALLEY said that, as far as he was concerned, he should say that a summer session was not only unnecessary—especially as there was to be a four years' curriculum—but absolutely a nuisance: and he would rather suggest that all the schools should commence and terminate a month earlier.

Mr. SIMPSON said that that would necessitate the alteration of the date of the examinations from May to March.

The PRESIDENT said that the bye-laws gave them power to hold the examinations either in March, April, or May.

Professor WILLIAMS said he quite agreed with Professor Walley's suggestion, and he thought it would be a good thing both for the colleges and students.

The PRESIDENT said he presumed he might take it as an instruction to the Committee that at the adjourned conference with the Governors of the Royal Veterinary College they might arrange to commence work in September, and to hold the examinations either at the end of March or the beginning of April.

Agreed to.

Mr. TRIGGER said that if the suggested arrangement were come to, he would move that the Council should consider the alteration of the date of the examination.

Appointment of a Clerk.

The SECRETARY read the report of the Committee appointed to elect a Clerk, which stated that Mr. Robinson had been appointed at a salary of £75 per annum, and had been requested to find a security in £250. The premium had been paid to an insurance company, and a policy had been promised.

On the motion of Mr. MERRICK, seconded by Mr. MASON, it was resolved that the premium (£2 10s.) be paid out of the funds of the College with the other insurances.

Election of a Board of Examiners.

On the ballot being taken, the following gentlemen were declared to be duly elected :—

Examination "A."

Chemistry.—Mr. Finlay Dun, F.R.C.V.S., late Lecturer on Materia Medica, Edinburgh Veterinary College, and Mr. H. Somerville, B.Sc., Lond., Lecturer on Chemical Physics, Westminster Hospital.

The PRESIDENT said that with regard to the subject of Botany, he would like to call the attention of the Council to the fact that on the 22nd of March one of the late Examiners came to his office and said there had been some mistake, and that he had not been nominated, although he had requested a gentleman to nominate him. He further said that he had received a reply from the gentleman declining to nominate him, and he asked him (the President) if he would allow him to be then nominated. Of course he had told him that the date for nomination had been already stated, and it was not in his power to make any alteration. On the 23rd of March a nomination was received from a member of the profession, but acting on what he considered the proper thing to do, he declined to accept the nomination. The matter was before the Council, and if they liked to make an exception and to receive the nomination, the name could be put up with the others.

Mr. SIMPSON said he was afraid that under the circumstances there was no help for it, and that the nomination must be declined.

Agreed to.

Botany.—Mr. W. B. Walters, F.R.C.V.S., and Mr. J. R. Green, M.A., B.Sc., F.L.S.

Elementary Anatomy.—Mr. T. H. Simcocks, F.R.C.V.S., and Mr. W. A. Taylor, F.R.C.V.S.

Examination "B."

Anatomy,—Dr. Fleming, C.B., F.R.C.V.S., LL.D., and Mr. W. F. Peacock, F.R.C.V.S., M.R.C.S.

Physiology and Histology.—Mr. J. G. McKendrick, M.D., LL.D., F.R.S., and Mr. F. Smith, F.R.C.V.S., Professor Army Veterinary School.

Examination "C" (*Oral*).

Mr. J. Roalfe Cox, F.R.C.V.S., and Mr. John Malcolm, F.R.C.V.S.

Morbid Anatomy.—Mr. D. J. Hamilton, M.B., F.R.C.S., F.R.S.E., and Mr. C. Rutherford, F.R.C.V.S., late Professor Army Veterinary School.

Cattle Pathology.—Mr. W. Duguid, F.R.C.V.S., and Mr. J. Freeman, F.R.C.V.S.

Examination "C" (*Practical*).

Horse Pathology.—Mr. F. Duck, F.R.C.V.S., and Mr. W. Woods, F.R.C.V.S.

Professor PENBERTHY called attention to the fact that the name of the proposer of one of the persons nominated did not appear in the Register.

The PRESIDENT said that, acting on the advice of the solicitor, as the name of the proposer was not on the Register he must decline the nomination.

Practical Cattle Pathology.—Mr. James Clark, F.R.C.V.S., and Mr. H. Olver, F.R.C.V.S.

Prosecutions.

Mr. THATCHER asked the consent of the Council to institute prosecutions in one or two cases for offences under the the bye-laws.

On the motion of Mr. MASON, seconded by Mr. SIMPSON, authority to prosecute was given, and the seal of the College was affixed thereto.

Election of Secretaries to the Board of Examiners for England and Scotland.

The SECRETARY said a letter had been received from Mr. Rutherford, offering his services as Secretary to the Board of Examiners for Scotland, leaving the question of remuneration in the hands of the Council. Applications had also been received from Mr. John E. Grey, of Edinburgh, offering to do the work for £50; and from Mr. James F. Player, of the Edinburgh Riding Academy.

On the ballot being taken, Mr. Rutherford was declared to be unanimously elected.

The PRESIDENT said that some time ago a letter had been received from Mr. Rutherford asking that the remuneration to the Secretary for Scotland might be increased. The Council were well aware that the duties had materially increased, and were likely to do so still further. In May a written examination would be added, which he was certain would entail a great deal of labour. If the Council were of opinion that the remuneration should be increased, perhaps someone would move a resolution to that effect.

Mr. NISBET moved that the salary be increased to £75 per annum.

Mr. HUNTING moved that it be increased to Sixty Guineas.

Mr. MASON seconded the motion.

Veterinary-Captain RAYMOND said that the written examinations which were coming off were quite new, and the Council was unable to form an opinion as to the amount of work they would entail; £50 was too little, and he thought the Council would be doing a safe thing in adopting Mr. Hunting's motion.

Professor WILLIAMS thought they might agree upon £60.

The PRESIDENT said he had gathered from his correspondence with Mr. Rutherford on the subject that that gentleman would be perfectly satisfied with £60.

Mr. NISBET said that under those circumstances he would ask to be allowed to withdraw his resolution.

Mr. Hunting's motion was then put, and agreed to.

The PRESIDENT said the Council had now to elect a secretary to the Board of Examiners in London. Mr. Hill had performed that duty for some time

past with the utmost satisfaction, and he would move that that gentlemen be re-elected.

The motion was put, and carried unanimously.

Mr. HILL thanked the Council for the honour of his re-election.

Election of Auditors.

Mr. WRAGG moved that Messrs. Warner and Woodger be appointed auditors for the ensuing year.

Mr. MASON seconded the motion, which was agreed to.

Appointment of Scrutineers.

The following gentlemen were appointed Scrutineers for the annual voting papers:—Messrs. Reekie, McGill, Butters, Glover, Burton, Rogers, Falshaw, Rogerson, Roots, Davidson, Irving, McOnie, MacPherson, Rowe, and Reid.

Date of Examinations in England and Scotland.

The PRESIDENT said that Professor McFadyen had told him that his students would be ready by Monday, 8th of May. That would mean commencing in Scotland on the 15th.

Professor WALLEY said that as far as he was concerned he should certainly not be ready before the 15th.

Professor WILLIAMS thought the 15th would be a very good time to commence in Scotland.

The PRESIDENT pointed out that the written examination, both in London and in Scotland, would be held on the same day, so that if the examinations commenced here on the 8th of May the written examination in Scotland would also take place on that day, but the *viva voce* examination would not take place until the succeeding week.

Professor WILLIAMS said that that would suit him.

Professor WALLEY thought the 15th was quite early enough for the written examination.

Professor WILLIAMS said he was quite willing to go with the majority.

Professor MCCALL moved that the written examination take place on the 8th of May.

Professor WILLIAMS seconded the motion, which was agreed to.

Representation at the Examinations.

The PRESIDENT said that at a meeting of Council held some time ago, a resolution was passed that certain members of the College should be delegated to attend the examinations. It was for the Council to say who should attend the examinations on its behalf.

Veterinary-Captain RAYMOND presumed that the representative had a perfect right to attend the written examination.

The PRESIDENT: Certainly.

Professor WILLIAMS asked whether all the expenses were to be paid.

The PRESIDENT said it was ordered that the railway expenses should be paid.

Professor PENBERTHY thought it highly essential that the Council should be directly represented at the written examination. It was much more important that a delegate should be present there than at the practical examination. He was simply to report at the oral examination; but it was his (Professor Penberthy's) idea that the written examination should be under his control.

Mr. HUNTING proposed that Messrs. Burnett and Donald be asked to attend the Glasgow and Edinburgh examinations.

Professor WILLIAMS seconded the proposal.

Mr. DONALD asked whether, if they attended the written examination, they would be expected to attend daily until the oral examination was completed.

The PRESIDENT said they would have to make a general supervision of the examination. In Scotland the oral examination would not commence until a week after the written examination.

Mr. HUNTING said it was never expected that a man should be controlled in any way. He was simply asked to attend, and he would use his own judgment how long he stopped.

Mr. DONALD said that if it was not compulsory to stay the whole time he had no objection to attend, but if it was otherwise he should very seriously object.

Professor PENBERTHY thought it should be an instruction to the delegate that he should attend the examination throughout; and if he could not do so, more men should be appointed. It was at the delegate's disposal whether he attended or not, and it might happen that the examination took place without any representative from the Council being present. It was the intention that the Council should be represented at the examination, and unless some definite instruction were given to the delegate the rule might be broken through for want of proper supervision.

Mr. DONALD said it was hardly reasonable to ask him to leave his practice for a week when there were other members on the Council. He was willing to do his share, but not to attend for seven days.

The PRESIDENT thought that under the circumstances it would be best to leave it to him to make some arrangements with gentlemen to attend the examinations. He would undertake to put himself in correspondence with certain gentlemen and ask them whether they would undertake the duties.

Mr. HUNTING said there ought to be no compulsion in the matter. It was purely voluntary. The delegates were simply appointed to let the Council know what were the weak points in the examination, but they were not to see the examination carried out.

Professor MCCALL asked how Mr. Rutherford could carry out the examinations at Glasgow and Edinburgh at the same time.

The PRESIDENT said that Mr. Rutherford would appoint someone else to conduct the examination at Glasgow while he officiated at Edinburgh; and he would also provide persons to supervise. The Council would recollect that certain regulations for the Written Examination were passed on the 5th of January last, but it had occurred to him that it was necessary to give the secretaries more definite instructions. He had therefore drawn up the following list of instructions:—

"The candidates will hand to the Secretary their educational and college attendance certificates, and pay their fees at least seven days before the examination takes place.

"As soon as the Secretary has ascertained the number of candidates he will arrange the examination room in three divisions (A, B, C), taking care that there is sufficient space between each candidate to prevent talking or copying; he will also arrange for assistance in supervising the examination.

"The Secretary will personally see that upon the desk of each candidate is placed a sufficient quantity of foolscap paper, a sheet of blotting-paper, a pen, and a supply of ink, together with the printed questions.

"When the candidate pays his fees he will be given a number, by which he will be known both at the written and oral examinations.

"The Secretary will instruct the candidates to place their number at the right-hand corner of each sheet of paper used for the examination.

"Every candidate to be in his place at least five minutes before the examination commences, and he will not be allowed to leave the room while

the examination is in progress, and no one will be admitted into the room except the candidates, and those engaged in supervising the examination.

"As soon as the examination is concluded, the Secretary will collect the papers and seal them up, and on the evening of each day preceding the *viva voce* examination, he will hand to the examiners in the several classes the papers of those candidates who are to be examined on the next day.

"In the event of any candidate talking, copying, perusing books or documents, or in any way misconducting himself, he will be at once suspended from the examination and disqualified."

On the motion of Professor WALLEY, seconded by Mr. HUNTING, the regulations were adopted.

Professor PENBERTHY asked whether any provision had been made against personation.

The PRESIDENT said that the men came up with their certificates and paid their fees. He knew of no way of providing against personation unless someone from the colleges were asked to attend and identify the men.

Professor PENBERTHY said that personation went on wholesale, and that was one of the weak points of written examinations.

Motion by Mr. Donald.

Mr. DONALD said he wished to bring before the notice of the Council the fact that two medicines were being regularly sold amongst stock-owners which contained poisons. He moved that a representation be sent by the College informing the Pharmaceutical Society that such preparations were being sold contrary to the Pharmacy Act.

There being no seconder to the motion, the matter dropped.

Obituary.

The SECRETARY read the obituary list.

The PRESIDENT said he wished to make a reference to the death of Mr. Briggs. That gentleman had for some years occupied a position upon the Council, was known and respected by them all, and had done his duty both to the Council and to the profession, and he thought it would ill become them to pass by the sad event without making some reference to it. He would ask some gentleman to move that a letter of condolence be sent to Mr. Briggs' widow.

On the motion of Mr. MASON, seconded by Mr. KIDD, it was resolved that a letter of condolence be sent to the widow of the late Mr. Briggs.

It was also resolved that a letter of condolence be sent to the widow of the late Mr. Archibald Robinson.

Dinner Committee.

On the motion of Mr. MASON, seconded by Mr. TRIGGER, a Dinner Committee, consisting of the President, Mr. Wragg, Mr. Simpson, and Veterinary-Captain Raymond, was appointed to carry out the necessary arrangements.

The Practical Examination.

The PRESIDENT called the attention of the Council to the fact that the cost of practical examinations had been gradually creeping up until it had now got to a very large amount. He thought they ought to consider how many horses, cattle, and legs should be supplied for the use of the examiners. They at present ordered what they like; but he did not think it was necessary that there should be quite so many. He should like an expression of opinion from the members of the Council as to the number of legs, &c., to be used for the practical examination.

Professor WILLIAMS said he did not wish to interfere, but he considered it a matter of absurdity to introduce the removal of shoes from dead legs. A

man had nothing to pull against. It was hard enough to pull a shoe off a living horse. He considered half a leg per student quite sufficient.

On the motion of Mr. HUNTING it was resolved that a letter be written to the practical examiners, stating that the cost of the examination had gone up more than it ought to do, and asking them to make it as economical as possible.

On the motion of Mr. WRAGG a hearty vote of thanks was accorded to the President, and the proceedings terminated.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

THE usual monthly meeting of this society was held on March 2nd, at the Royal College of Veterinary Surgeons, Red Lion Square, Mr. W. Roots, the President, occupying the chair. The other Fellows present were: F. Duck, J. Kettle, F. T. G. Hobday, Sidney Villar, W. F. Mulvey, T. C. Garry, Alfred Prudames, H. Butler, E. S. Shave, Henry Edgar, J. Macqueen, Fred. Smith, G. B. Holden, A. Butters, A. Rogerson, P. McOnie, J. Rowe (Treasurer), F. C. Mahon, F. Raymond, G. C. Lowe, F. W. Wragg, W. Pritchard, F. G. Samson. Visitors—Messrs. W. D. Smith, C. Rutherford, A.V.D., Morgan Evans, J. McFadyean, A. H. Archer, F. B. Lowe, A. P. Calastremé.

The Honorary Secretary was unable to attend owing to illness, and Mr. Mahon consented to act in his stead.

Letters were read from Professor T. Walley (Edinburgh) and W. H. Withers (London) expressing regret at their inability to attend.

Mr. Walter Stapley, M.R.C.V.S., of Camden House, Dartford, was unanimously elected a Fellow of the Society.

The resignation of Mr. Percy Gregory, of Tonbridge, was accepted with regret.

"ANATOMY OF THE FACIAL SINUSES OF THE HORSE."

Adjourned Discussion.

Mr. MAHON read the subjoined letter from Mr. J. S. Hurndall:—

"Sussex Villas, Cornwall Gardens,
"South Kensington, S.W.
"28*th February*, 1893.

"MY DEAR ROGERS,

"Very much to my regret and disappointment I find that I shall be prevented from attending the meeting of the C.V.M.S. on Thursday next, another appointment which I cannot possibly evade has cropped up; please make my apologies generally, and to Prof. Macqueen in particular. I hoped to have been present to explain that from the point of view I look at his subject, I consider he has not only absolutely failed to prove his case, but has, in fact, thoroughly established the precise contrary; at all events, I may say he has done so to my complete satisfaction, and I am more than ever convinced that I may very safely continue the treatment I have so successfully adopted in cases of Ozœna for the past three or four years.

"I beg to convey my hearty thanks to Prof. Macqueen for so ably and clearly demonstrating what he tried to disprove, at the same time sincerely regret that I cannot be present to try and show him my reasons for arriving at such a conclusion after carefully listening to his hard-hitting speech; I use the phrase 'speech' as he does not seem to care about the word demonstration, and if I may be permitted to say so, I think the objection is a very proper one, for in such a society as the 'Central' it is not desirable that any one of its

members should assume an air of superiority, never mind what their social or professional status may be. Heartily wishing you a successful meeting,

"I remain, my dear Rogers,

"Yours faithfully,

"J. SUTCLIFFE HURNDALL."

Mr. T. B. GOODALL: Mr. President and gentlemen, I have to thank my old college friend, the President, for allowing me to speak a second time on the subject of Professor Macqueen's address, and I have also to thank Mr. Barrett—who moved the adjournment of the discussion—for his forbearance in kindly giving way to me. When I come from my fresh country air to London I feel that for the first few hours a sort of "deadly torpor fetters my mind and limbs like palsy, and brain and sense grow faint as though the light and very air were charged with sluggishness." If you will allow me, I will read what I have to say, and so shall accomplish my task more quickly. I will not waste your time with any preliminary remarks, but go direct to the subject.

The value of a scientific debate cannot in any way be enhanced by the introduction of sarcasms. When my original paper on the sinuses was penned, I invited, and expected criticism, in fact when an individual has the audacity to take a line of his own in matters veterinary professional, he expects his position to be assaulted; but Professor Macqueen's sarcasms were, to say the least, uncalled for, and in my humble opinion such a line of argument is to be deprecated. I can only tell him that if they have afforded him any gratification, well and good—they fall perfectly harmless upon me. But I will not occupy any of your valuable time on this theme except to say that when I, a country practitioner, have devoted the time and trouble necessary to prepare such a paper as mine, supplemented by properly prepared specimens for illustration, which of itself is matter of ridicule with Professor Macqueen, I *do* aspire to be regarded as a serious worker and searcher after the truth, and decline to be relegated to the rank of a professional mountebank, such as Professor Macqueen would make me; and if, in any of the subjects I have handled, one single phrase or expression has been uttered that would tend to make anyone deviate in the slightest degree from the straight and narrow way in this search after truth, it has been done inadvertently. No single assertion has been made by me without due consideration, and in the belief that when it was expressed, it was strictly true.

In this search, gentlemen, we are on safe ground only when we work for the love of the work, and thirst not for victory but for excellence. If we are not to go to the book of nature we may as well shut up our dissecting rooms, and give no more prizes to stimulate students to have recourse to nature for knowledge. If one begins to study from the book of nature he will be a student all his life.

I am found fault with first for having said that our standard anatomical works are not clear in their description of these parts. Professor Macqueen gives quotations from nine different authors, *seven* of the nine quotations mentioning *only* the nasalo-maxillary canals; and when these several quotations are taken to the book of nature for verification, *not one* of them is absolutely correct, according to Professor Macqueen's own showing.

Blaine does not recognise that the opening is sometimes *large*.

Percivall talks of a prominent crest formed by the junction of the superior turbinated with the ethmoid bone; whereas this is really a large ethmoidal cell, and is part of the ethmoid bone. He also speaks of the opening as a curved fissure, but does not mention that it is sometimes large.

Gamgee says:—"The anterior sinus opens separately into the middle meatus by the *anterior* part of the common aperture." Whereas it is by its *external* part.

Varnell does not mention the opening being sometimes large, though he does assert that the valve opens and closes.

Strangeway says the inferior maxillary sinus is generally isolated from the rest, whereas it always communicates by the common opening.

McFadyean describes the opening as a curved slit not visible from the nasal fossa, whereas it is now proved that it is sometimes large enough to admit two fingers.

Professor Williams says the communication from the nasal chambers to the sinuses is by a small passage, guarded by an imperfect valve. Here again it is not mentioned that the opening is sometimes large.

Chauveau—I only have the old edition of this work, but the description as given by Professor Macqueen from the new edition seems very lucid; but he had not mentioned that the plate separating the inferior from the superior maxillary sinus is not always imperforate, and he says, too, that the roots of the fourth, rarely those of the third molar tooth, are seen in the anterior maxillary sinus. Whereas I have seen, and Professor Macqueen has shown us also, that sometimes the fifth or even the sixth teeth may be in this cavity.

Bourgelat—I have not had the advantage of studying this work, and Professor Macqueen gives no specific quotation from it.

But my point is that the nasal chamber and sinuses are by none of them succinctly described. None of them mention the three passages of the nostril, as being for separate purposes. (Specimens exhibited.) None of them notice the fact of the sinuses changing shape and position with age. None of them, except Chauveau, even hint at the nasalo-maxillary canal varying in size. None of them mention that the upper or olfactory meatus is formed by the outward overlapping of the mesethmoid prolongation. None of them mention the fact of the sinuses being a "rolling out" of the turbinated bones, and their function being analagous to the more complex turbinators of other animals where the sinuses are rudimentary or altogether absent, *i.e.*, olfactory.

Chauveau, in the 1873 edition, infers "that their *exclusive* function is to give increased volume to the head without increasing its weight; and in this way to furnish wide surfaces of insertion for muscles attached to this bony region."

None of them describe how the "rolls" of the appendages of the turbinated bones "focus" as it were, at the opening to the sinuses. I never remember reading of the boat-shaped fossa at the lower part of the middle meatus.

Professor Macqueen objects to my saying that the eustachian orifice is *narrow*. If he would designate it anything but narrow, his eyes and mine cannot be constituted alike. A few years ago I made some careful dissections of this part of the head, and the impression that was made on my visual apparatus by these dissections was that the opening of the eustachian *canals* (it is an error to call them *tubes* in the horse) are seen as *narrow* perpendicular *slits* from one to two inches long; one on either side of the posterior part of the cavity of the fauces; and that their inner edges are bounded by triangular fibro-cartilaginous plates, which plates form the basement structure of the posterior part of the fauces, and are formed by a widening out of the fibro-cartilaginous pillars proceeding from these orifices to the petrous temporal bone, and which form in their course the inner sides of the eustachian canals, the other side being formed by the tensor palati, and stylo-pharyngeus muscles. (Specimen exhibited.)

Professor Macqueen next criticises what I have to say about the period of life when the anterior maxillary sinus is formed. The quotation he gives from my paper is one I took from Chauveau's Anatomy, page 448. I will give you the quotation in full, and you will then understand why I exhibited the fœtal

heads, which I have brought with me again to-day. It was to show that the "authority" was wrong on this point. The quotation is "The formation of the inferior maxillary sinus is more tardy than the others, though it is not so late as seven or eight years as the majority of veterinary anatomists have asserted. M. Goubaux has proved that the sinus is already present at six months old," etc. Then I showed this head of a 240 days' fœtus, which I hand round for your inspection again now, showing the sinus distinctly formed at that age, and showing also this head of a fœtus at birth where the sinus is much larger.

My next sentence, about the possibility of an expert being able to tell whether or no a young animal had breathed by the condition of the sinuses, I quite expected to be criticised. I will explain to you how I came to make the assertion. I was disarticulating the bones of a fœtal head, endeavouring to keep as intact as possible the lining membrane of the sinuses. The point of my scalpel made a small opening into the sinus, which was followed by an immediate inflation of the cavity. I tried it on another with the same result. I cannot see that this in any way stultified my previous statement. The sinus was present but not inflated, and I show you both the specimens.

Mr. Macqueen then commented on my assertion that the common opening dilated and contracted. Since the last meeting I have been making one or two further experiments on this point, on which I will speak a little later, when we will drop the romance of the physiologist and stick to the hard facts of the anatomist.

My assertion that there is erectile tissue in the nasal chambers is made light of. I will quote from an "authority" though I may tell you that I had not seen this book when my original paper was penned. It is from a medical work entitled "The Throat and its Diseases, including associated affections of the Nose and Ear," by Lennox Browne, F.R.C.S., p. 497, "Anyone who takes the trouble to remove and examine microscopically a portion of the membrane covering the inferior turbinated bone, will readily make out an erectile tissue of venous sinuses and fibro-muscular trabeculæ, homologous with the corpora cavernosa of the penis. This layer of erectile tissue is limited principally to the respiratory portion of the nose, that is to the lower part of the septum, and the inferior turbinated bodies; but it is also to be found in the deepest layers of the mucosa covering the superior and middle turbinal bodies; it is, however, on the inferior that it attains its greatest development." This author then quotes the opinions of the following "authorities" on the subject:—John Mackenzie, Kohlrausch, Hyrtle, Kolliker, Bigelow, all of whom say it is erectile tissue. Zuckerkanall calls it contractile. Bosworth thinks it must be classed as contractile.

Professor Macqueen's next fair criticism is a *direct mis-quotation* from my paper—*and on this misquotation hinges most of his abuse of my much maligned paper.* It is from page 13 of my pamphlet—the words are—"If, as we know from experience, there is any difficulty in establishing a drainage from the sinuses to the nasal chambers, the canal being closed from any cause, what more simple than first to try a syringe with a curved nozzle, which should be introduced under this plate into the natural orifice, to effect a passage by forcing a stream of water into the natural channel." Now, gentlemen, I never suggested that this could be done easily from the nose; but I suggested that the best place for *trephining the frontal sinus was over this plate* of bone, and the opening from the nasal chambers, and from *this position* with a curved syringe, a stream of water might be forced into the nose. This was said as being a better place than had been suggested by Prof. Smith. I never, in any part of my paper, said it would be *easy* to inject the sinuses from the nasal chambers. What I say on the subject is—that having found ingesta in the sinuses, it left me without a shade of a doubt in my mind that foreign bodies

might gain an entrance, and that in the treatment of these sinuses by nasal insufflation, the agent readily gains an entrance from the nasal chamber to the sinuses (p. 3), and on p. 14 I say, "In man the maxillary sinus is large, and surgeons can reach it and treat disease in it by passing a soft curved bougie up the middle meatus, and into this communicating orifice. Why may not this be done with the horse? The difficulties are surely not insurmountable, but it would require practice and a thorough knowledge of the anatomy of the parts and their functions." Can any of you gentlemen find fault with my having thrown out this suggestion for our specialists to do a little in the advancement of veterinary surgery? I tell you, gentlemen, that this is not an impracticable task, for with some trouble and patience—and what delicate surgical operation is there that does not require these virtues—I have been successful in passing this whale-bone probe through the anterior nares, up the middle meatus, and through this opening directly into the sinus! And I have done this in several dead heads of all ages. I have neither the time, nor the means at my disposal, for carrying on such an investigation as this to its logical end, but this might be done at such an institution as the Royal Veterinary College with its staff of workers, helpers, and students. The instrument shown us by Prof. Macqueen would be perfectly useless for such an operation as I suggest; it would not reach anything like far enough; in an average-sized head the instrument would need to be passed about fifteen inches before it would be into the sinus. I would recommend a long hollow instrument, from 18 inches to two feet in length, and about one-eighth to one-quarter of an inch in diameter, to be made of a soft material and with a soft pad on its extremity, and having in it a whale-bone probe (I am only throwing this out as a suggestion, it is for you experts to perfect the instrument); such an instrument might be passed *into the sinus*, then the probe could be withdrawn, and fixing in the outer end of the tube either insufflator or syringe, the curative agent might be thrown directly into the sinus, and the cavity *filled*, if thought advisable. With a spray apparatus affixed to the hollow tube, the sinuses might be medicated thoroughly. Once or twice a week would be quite often enough to apply the remedy. (Mr. Goodall here demonstrated his method of passing the instrument.)

Through the many phases of this discussion I have been careful *not* to suggest the advisability of treating all cases of disease of the sinuses by this method, neither do I by any means imply that it would be always easy; what I say is, that with practice the difficulty should not be insurmountable, and it is only the man who is willing to take trouble who will succeed in either this or any operation.

But quite independently of this delicate operation, as it seems probable that the opening and closing of this valve is in health ruled by other causes than by the respiratory acts, so would it be instructive to know, that if all these chambers of the appendices of the turbinated bones, which open into the middle meatus and nasalo-maxillary canal, had our medicinal agent injected freely into them by bringing the nozzle of the insufflator into the middle meatus, whether the olfactory particles of the agent could be detected in the sinuses, say the next day—especially when we bear in mind that from Prof. Macqueen's statistics about 20 per cent. of horses have large openings. Before proceeding further, you may, perhaps, allow me to show you two heads, one nine years old the other twenty-six—demonstrating the extent of the extremes of variation in the position and course of this boundary between the anterior and superior maxillary sinuses. In the old horse it is seen to proceed towards the posterior part of the maxillary crest, and in the nine-years-old it goes forward to its extreme anterior point. If either of these heads had been trephined in the old prescribed spot, one or other of the sinuses would have been missed in each case.

Prof. Macqueen then handed round specimens reported to be in refutation of my theories? Why, gentlemen, they were *all* simply demonstrations of some of the facts I had described, and which you will find in the illustrations of my pamphlet. I gave the exact position, course, shape, and formation of this opening, and I pointed out that it varied in size. I described the sinuses and their variation of shape and size with age, and it is gratifying to think that such an eminent scientist should, after all his satire, agree in the main with much I have said as to the anatomy of these parts. And where we differ about this "valve" opening, I hope to convince both him and you that my conclusions are not wrong.

The thickest of the contention seems to centre round this nasalo-maxillary opening, its conformation, and whether or not foreign bodies, or medicinal agents can or do pass through it from the nasal chambers to the sinuses. I maintain that I have seen ingesta from a choked horse, in the sinuses. Prof. Macqueen's experiments, if left unanswered, would make it appear an impossible task to medicate these sinuses from the nose. I hope I have already proved to your satisfaction that a closer study of the parts clears away many of the difficulties, and perhaps a demonstration of the opening will clear away some of the "cobwebs" that have been introduced. The ethmoidal turbinated bone is at this point very firm and rigid, and its firm base forms an arch, which is the roof of the opening; but the maxillary turbinated bone, contrary to the assertion of Prof. Macqueen, at its extreme upper and outer part forms a soft collapsible, bulbous enlargement, terminating by a free margin in the anterior maxillary sinus, which is adapted to the corresponding cavity or arch in the base of the ethmoidal turbinator, and this is the lower part of the canal. This part of the maxillary turbinator is soft and flexible, and after even strong compression, it will, in the fresh subject, rebound as it were, to its normal shape. Even when the opening appears so small as only to admit the blade of a table-knife flatwise, I have passed a finger easily through the opening, and the bulb has sprung into its place again when the finger was withdrawn. By introducing the point of the nozzle of an aspirator into the maxillary sinus, I have, by the action of the piston been enabled to see this soft bulb rise and fall as the air was extracted or sent in. This proves to you, surely, that this valve is not a rigid bone, but that in life it opens and closes. It is not a physiological romance but a demonstrable anatomical fact.

I should only weary you were I to theorise as to what seems to be the agency inducing this action in life. To-night I am, by your indulgence, only on the defensive. But I should like to point out to you that this opening is guarded anteriorly by a firm ridge of bone—the anterior part of the basement of the ethmoidal turbinator. While this is an additional safe-guard to the others I have mentioned for the protection of these sinuses against the ingress of foreign matters entering by the anterior nares, it would, at first sight also present an apparently insurmountable obstacle against medicating the sinuses per nasam—though it is really no obstacle.

But it would also account for my having found ingesta in the sinuses. In choking, there is a great expiratory effort, foreign matters passing from the fauces down the nasal chambers would be lodged *behind* it, and drawn or forced into the sinuses, and prove a cause of disease, especially if the sinuses are filled in the *expiratory* efforts. This also explains to us the reason of negative results by Professor Macqueen's experiments. *No possible force* could make medicinal agents enter the opening from the *front*—especially if the size of the opening is normal, but the point of my argument here is that it is probable that it is the 20 per cent. of horses with the larger openings that are most prone to disease of the sinuses; and that these should, as we know in practice they do, in many cases, respond to treatment by nasal insufflation.

My experience is that owners have an objection to having holes bored into the heads of horses of any value, and if recovery can be promoted without trephining they are the better satisfied. As I have said before, and as I repeat here, there are certain cases when we *must* trephine to effect a cure—but do not let us get the rooted idea that nothing can be done per nasam.

Gentlemen, I beg to thank you extremely for your kind forbearance and indulgence. I claim to have done good service to the Profession, if only in having been the means of stimulating research into an important subject—more so than if I had allowed my small "find" to pass over unnoticed and unrecorded. My object to-night has been to satisfy you that I am an earnest and not a frivolous worker, and if I have done this I shall not have claimed your indulgence in vain.

Captain RAYMOND (after a pause) said that as no one seemed inclined to resume the discussion at that stage, he wished to make a few remarks. He had been waiting for Mr. Hunting (who arrived subsequent to Mr. Raymond's speech) as what he had to say applied mostly to that gentleman. He thought that whatever might be said for or against the work of Captain Smith and Mr. Goodall, they were at least all agreed that it was very good work, and had benefited the profession in inducing thought on the subject dealt with. Mr. Goodall had, he thought, held his own; at any rate as regarded the quantity of material he had been able to bring forward in support of his case. He was not prepared to share Mr. Goodall's views in all that he had said, notably about that head he had passed round with a probe in the sinus. After Mr. Goodall had read his very interesting paper some time ago he got a few heads and endeavoured to find out really how the matter stood, and, strange to say, he attempted to perform exactly the same experiment as Mr. Goodall had performed. It was quite true that one could insert a probe into a horse's sinus when the head was split in two, and when one could see one's way how to do it.

Mr. GOODALL: I have passed the probe into nearly all my heads before they were split in two.

Captain RAYMOND (continuing) said that he was bound to say he had failed to get the probe in when the horses' heads were entire, when the skin was on, and when they were in a semi-normal condition.

Mr. GOODALL: Well, I passed the probe into the heads before they were split.

Capt. RAYMOND went on to say that Mr. Goodall supported much that, in his experience, he had found to be the fact. He did not say that his reasoning of how it happened was absolutely correct, but many of his facts, according to what he had seen in practice, were right enough. When, however, two original investigators discussed a subject from opposite points of view, it was not wise to come between them, even as it was unwise to interfere between two rival editors or a couple of prize-fighters. The intruder in either case was likely to have both parties down upon him, and it would be made warm for him. However, I am concerned with Mr. Hunting, who is not here. He said, in the course of the discussion at the last meeting of the society, "As to the treatment of this disease, the practical point was that a great number of gentlemen had lately told them a good deal about this insufflator, and had strongly recommended its use to cure nasal gleet. It was not only recommended for ozœna, but was recommended by gentlemen when they knew, or thought they knew, that they had the facial sinuses half full of pus." He did not know whether Mr. Hunting alluded to some remarks which he made some time ago—very likely he did. Well, if they would permit him he would read exactly what he did say. They must recollect that he spoke on the spur of the moment, and the reason why he spoke was simply because Captain Smith made some very strong remarks about the uselessness of treating a horse's

nose directly. He thought Captain Smith alluded more particularly to the nasal sinuses, but the disease was ozœna. Well, he used these words:—"Now, in the first place, I should like to say a few words about the diagnosis of nasal gleet. I think that it is difficult, because you may very often have a disease of long standing of the membrane of the nose, which may not affect the facial sinuses, and still may give rise to a nasal gleet." That was thrown out as a suggestion, it was not an authoritative statement. "Now, my reason for saying that is this: Captain Smith holds very strong ideas about the use of an insufflator. Now, whether it is owing to the disease of the membrane of the nose solely, or whether it is that this opening into the sinuses of the head does remain more patent than some of us think, I think there is very little doubt in the minds of practical men that cases do occur of nasal discharge of long continuance, which may be cured by insufflation or spraying. Some time ago I experimented with an apparatus, which I invented really for the purpose of treating chronic cough. I wanted to invent some machine which would enable me to get into communication with the larynx, either by the mouth or the nose. I found it very easy to get there through the nose. In course of time I had cases of catarrh, which I treated. They got well, I think, a little quicker by that treatment than by the medical treatment. Later on, I had a case of nasal gleet." This, Captain Raymond explained, was a case of long standing. It was so diagnosed by the gentleman who sent it to his infirmary. It was diagnosed as a case of nasal gleet and pus in the sinuses, and Captain Raymond said he diagnosed it similarly. They might have made a mistake, but there was the fact of two people diagnosing the case as one of nasal gleet and pus in the sinuses. Well, this animal's nose was sprayed with the apparatus he had mentioned, and the horse recovered within a fortnight. He did not wish to attempt an anatomical explanation or anything of that kind, but merely to state the fact. It might be said that there was no pus in the sinuses, and that the case was simply one of disease of the membrane. If so, it was shown that cases of gleet from the nose were curable, and that the membrane of the nose could be cured by spraying. Mr. Hunting spoke of "a great number of gentlemen" in veterinary practice who had recommended the use of the insufflator to cure impacted sinuses. This remedy had, consequently, been tried by "a great number" of veterinarians—presumably not all fools—and it had by them been found successful. Surely, then, there must be something in it. He did not mean to say that it was a good way of treating the impacted sinuses; he had simply instanced an experiment which had proved successful, and, later on at the same meeting, he mentioned that he had used his apparatus in other cases of nasal discharge without success, recourse being had to trephining. He never meant to recommend the use of the apparatus as an all-round cure for impacted sinuses, for he had no doubt that the case he cured was not a case of *inspissated* pus. He never dreamt of such a thing. He had intended to offer some suggestions as to the way in which the spray might enter the sinuses, but it was unnecessary for him to do so, as Mr. Goodall had gone into the matter very fully. Mr. Hunting said something about trying a gimlet in cases of disease of the sinuses. Well, he had no doubt that that was a very good method of diagnosis—probably it was the best. But there was the remark of Professor Smith at a former meeting which should not be discarded. He said, "You may have a very considerable amount of pus existing in your lower sinus, and yet it may not be very much affected, simply because the fluid is discharged as fast as it is collected." Of course, if the fluid is discharged from the sinuses as fast as it is collected, they could not, naturally, expect to find very much on their gimlet.

(*To be continued.*)

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

Annual Meeting and Dinner.

The Annual General Meeting and Dinner of the Association were held at "The Great Western" Hotel, Reading, on February 24th. The chair was taken by the President, Mr. J. D. Barford, Southampton, and there were also present Messrs. W. J. Mulvey, F. W. Wragg, J. Sutcliffe Hurndall, Hon. Sec.; J. P. S. Walker, Oxford, Treasurer; C. Wood Page, Banbury; W. Hunting; Walter Western, Bracknell; P. Irving, Chipping Norton; Sidney Villar, Harrow-on-the-Hill; G. A. Lepper, Aylesbury; John Varney, Winslow; Albert W. Wheatley, W. G. Flanagan, Reading; E. C. Howard, Newbury; A. L. Butters, Paddington; R. Page Bull, Deddington; and Major J. Kettle, A.V.D., visitor.

The President explained that by an oversight they forgot at the last meeting to thank the outgoing President (Mr. H. C. Lepper) for his conduct of the business during the last year; and he now proposed a hearty vote of thanks to him. The Hon. Secretary seconded the resolution with great cordiality, referring to the great kindness and the business abilities Mr. Lepper had shown throughout his year of office. The resolution was carried unanimously.

The Hon. Secretary then announced apologies for inability to attend the meeting from the following gentlemen: Messrs. W. Wilson, James East, Joseph East, F. W. Hanks, Thomas Powell, A. Chisholm, E. J. Mellett, C. J. Emerton, S. H. Slocock, C. Sheather, C. Carter, E. Langford, J. H. Wilson, F. W. Willett, G. T. Cannon, H. G. Rogers, Hatch, Owen, A. E. Barlow, Dr. Fleming, Pofessors McCall, Walley, and Williams; and by telegram from Mr. T. B. Goodall, Sir Henry Simpson, and Mr. James Simpson.

The Institute of Preventive Medicine.

The President said the next business was to consider a motion, of which he had given notice, in favour of a grant being made from the funds of this association in aid of the proposed Institute of Preventive Medicine. Feeling that prevention was more largely entering into their practice than had been the case in the past, and knowing to a certain extent the principles the new association would move on, he ventured to suggest that the matter should at any rate be further considered by that meeting.

The Hon. Secretary read, at the President's request, a letter written to him by Mr. Hunting, under the impression that his engagements would not allow him to be present at that meeting.

Mr. Hunting said that letter was almost a private communication to Mr. Hurndall. In *The Record* he rather rushed at this thing, thinking it must be good under all circumstances for the association to be connected with the medical profession in a new venture of that kind. But Mr. Malcolm, of Birmingham, and one or two other veterinary surgeons, had pointed out to him that it was a little doubtful whether they would obtain the benefits they desired from that institution. They might run away with the idea that because they came out so well at the Hygienic Congress any other connection with the medical profession would also do them good. One thing that had been insisted on was that if they had subscribed to the Institute they should ask for at least two members of the veterinary profession to be on the Council of the Institute. But supposing they got that, and granted a subscription of £100 or £200, what good would it do them? It did not follow that they would be able to have their own way, or even to have any allowance made for them. Taking an ordinary human-nature point of view, it was possible their £200 might help on the Institute, and that they might have the honour and glory of having two men on the Council whose opinions might be expressed

but whose ideas would never prevail. So far as he knew, the medical profession had not often put members of the veterinary profession in any prominent position. The work done on the diseases of animals had up to the present time, he was sorry to say, been a miserable failure. Let them take for instance the work of Klein on the eruptive diseases of cows' udder, and his work on diphtheria, and they would find the result had been error in every case. (Mr. Walker: and always will be.) If there were to be any investigations into the diseases of animals they ought to be conducted by a professional bacteriologist in conjunction with a veterinary surgeon; for the latter could claim that they were the only body in the country who were able to recognise positively the clinical symptoms of disease in animals. Medical men could not recognise those symptoms as they could; and therefore he held that the public should be protected against the errors of medical men in the investigation of the diseases of animals transmissible to man, which was one of the greatest questions of the day; and unless they could see that they were going to have a joint "hand in the pie"—really to share the work with them—it was very doubtful to him whether that association should take any part in establishing the Institute. He thought they should hold their hand until they saw definitely what was proposed.

The PRESIDENT agreed with Mr. Hunting that until they had a direct understanding that they should have some weight and authority on the Council they should not vote a sum of money; and he would now propose that conditionally on the Council being extended, and veterinary representation established, the funds of the association should be used.

The HON. SECRETARY seconded the resolution *pro formâ*, but said he had himself little sympathy with preventive medicine at all. His great aim in life was to use what little ability he had in his professional duties in the endeavour to cure disease, not to prevent it. All preventive medicine had up to the present time been a failure, so far as he understood it. Of course he might be wrong. Prof. McFadyean had admitted his work on the quarter-evil to be practically a failure. Pasteur had done more to spread rabies than he had done to prevent it. It was very well to advertise a lot of figures about cases, but much of it was mere assumption, as figures could easily be produced to show worse results than failure; he thought that as a profession they were doing themselves great dishonour to recognise M. Pasteur in the matter. He was quite in harmony with one portion of Mr. Hunting's remarks, for he did not see that they should "toady" to the medical profession at all. He had a great belief in being very blunt and straightforward in those matters. The medical profession would allow them to "play up to them" so long as it answered their purpose, and no longer. They had men of good education and standing, men who were able to take a good scientific position in the world and to hold their own with any medical men; and he thought they should take their own position and hold it, and not throw themselves away. If they found ultimately that the medical profession recognised their position, and were willing to allow them to take their proper status in an Institute of Preventive Medicine, if such was thought useful, it would be another matter. He was sincere and honest in his convictions, and his practice convinced him that his ideas were right, and that some day the ideas he held would be fully recognised. He might be labouring under a great mistake, but he did not believe preventive medicine to be anything but a mistake. Unquestionably no good could come from physiologists unless they co-operated with the better class of veterinarians, for they could not arrive at the truth unless they did. He should watch the proceedings of the proposed Institute with a great deal of interest, and should be very pleased to see good arise out of it, but he had his doubts and fears. At the same time he did not wish to set himself up as an authority, but it was a matter of conviction with him, and he

felt he could support the President without compromising his own particular views in the matter. The thing was to have light thrown on the whole subject and to have truth envolved therefrom if it was possible to get it; and they could not do that if they blinded their eyes to things being done by other people, even if they held entirely contrary views. He agreed with Mr. Hunting also that they should not throw their funds away for the sake of futile honours. Let them be sure they were going to get some good from it. The medical profession would never give them the slightest honour if they could keep it from them. They had always shown them the "cold shoulder" and always would; and if they could work on their own lines by all means let them do so, and have the credit of it.

Mr. MULVEY said the College, until assured the veterinary profession was to be properly represented there, refused to subscribe; but they agreed that if the societies throughout the country subscribed a certain amount they would then undertake the care of the money, and would make an addition to it if they were assured the veterinary profession was to be properly represented.

Considerable discussion followed.

Mr. WRAGG said that at the meeting of the Council of the Central Association, where all the business relating to financial matters was done, a motion was moved to the effect that the Council viewed the scheme with favour, and that they would be prepared to support it when they found the veterinary profession was going to be represented on the council of the Institute.

The PRESIDENT thought the better way would be, in view of the present uncertainty, to ask the Secretary to communicate with Sir Joseph Lister, and ask for a thorough explanation of what was intended. He heard a little time ago that they were entirely reforming the bye-laws, and that the veterinary profession would be largely interested. Under the circumstances he would withdraw the resolution of which he had given notice, and propose that the Secretary write for information.

Mr. WALKER seconded the motion, and it was carried unanimously.

Mr. WALKER gave notice of the following motion, viz., "That in future members nominated for the office of President be elected by ballot, and that all members be eligible."

Place of Next Meeting.

The PRESIDENT said he should be very pleased to see the Association at Southampton, but feared it was so far from the centre that they would not get a meeting.

On the motion of Mr. IRVING, seconded by Mr. PAGE, it was unanimously resolved that the next meeting be at Oxford.

Members of Council, R.C.V.S.

The PRESIDENT said that as the time was approaching for the annual election of members of Council, it had been suggested that names should be given in that day that the Association should support.

Mr. HUNTING proposed, and the Hon. Secretary seconded, that the Association support the re-election of Mr. Wragg; and the PRESIDENT moved, and Mr. PAGE BULL seconded, a similar resolution in respect of Mr. Mulvey, both being cordially carried.

Morbid Specimen.

Mr. VARNEY exhibited the œsophagus of a two-year-old heifer, which he had caused to be slaughtered, as it was unable to take food. All the other internal organs were perfectly healthy; no suggestions were, however, offered towards elucidating the peculiar pathological condition demonstrated in the specimen, which was nevertheless examined with much interest; and Mr. Varney was heartily thanked, on the proposition of the President, seconded by Mr. Irving.

PRESIDENTIAL ADDRESS.

The President explained that owing to his very infirm health for the last month or two he had not written a paper. He must first tender them his best thanks for the very great honour they had conferred on him in unanimously electing him their President. He highly appreciated that honour, and at the same time felt his almost utter inability, in consequence of health, to carry out the duties of the chair in the thoroughly efficient way he should have liked to have done. He must ask them at any rate to accept the will for the deed that day, and to allow him simply to review the past year, and give them a brief retrospect of the events that had occurred to the Association and of some other matters of interest to the profession. That day twelvemonth they held their eighth annual meeting, which was presided over in a very admirable way by their friend Mr. H. G. Lepper. One part of the business at that meeting was to order the purchase of a large case of lithotomy instruments. Those instruments had since been manufactured and paid for, and were now in his charge, as President, for the use of the members. Their friend, Mr. Lepper, a year ago gave them a very practical inaugural address He would next refer to the new Charter, which was accomplished and carried through during the past year. That Charter temporarily came to almost a lamentable end in consequence of—should he say ?—the carelessness of somebody in the Privy Council office, by which one of the principal clauses in the Charter (that increasing the fees from 13 to 20 guineas) was omitted when the Charter was sent to them for perusal. Their solicitor happened to "spot" the omission at once, and communicated with the Privy Council, and after a great deal of consideration the matter was set at rest. It appeared that the matter was now going smoothly. The principal clauses that would be in action in the future were, first, that every member should be eligible to be elected a member of the Council, provided he had attained the age of 26 years or have been in practice for not less than five years. Now, therefore, Fellows had no privilege over Members, and Members had no privilege over Fellows, excepting on the examining board. After the next annual meeting the number of the Council would be 32; no member of the Council should be an examiner and no examiner should be a member of Council. By far the larger proportion of members of the profession had given in their adhesion to the Charter; and he as President of that Association, most certainly should support it, if only as a matter of policy, leaving it to the future to determine whether it was in the best interest of the profession or not. He himself had not any very direct opinion upon it; but upon the principle of the minority bowing to the majority he should feel in duty bound to do that if he did nothing else. The Association next met on the last Friday in June, which was quite a "red-letter day" in the annals of the Royal Counties' Association. He could not forget how hospitably and splendidly they were entertained, as a preliminary to their business; nor could he help congratulating their friend, Mr. James Simpson, that after 22 years of municipal life he had received the very highest honour that could be accorded to any citizen. He carried out his duties splendidly on that occasion, at the hospitable board at which he so sumptuously entertained them. Following on Mr. Simpson's great hospitality they had the pleasure of hearing read what was perhaps an unique paper in the annals of that or any other Society—Mr. T. B. Goodall's paper on "The nasal chambers and facial sinuses of the horse." Having quoted part of Mr. Goodall's paper, the President went on to quote from Mr. Hurndall's able remarks in re-opening the discussion on it at the November meeting. Proceeding, he said he thought it right to step a little out of the ordinary way to mention the National Association, as that was the principal Association in the country, and one the work of which they should highly appreciate and acknowledge in every way

they could. The Association was, as they knew, opened in Glasgow under the presidency of their able friend, Professor McCall, at a very large and successful meeting. Having quoted from Professor McCall's inaugural address, he said their friend Mr. Hunting followed with a very elaborate paper on "Veterinarians and their progress and position," and he had read both addresses with very considerable interest, and was satisfied the profession had benefited very considerably by them. After that a paper was read by Mr. Dewar on the various methods of castration, and some very valuable information was the result, almost every known method of castrating animals being introduced and discussed. The President went on to say that he thought great good might arise from the Metropolitan Glanders Order, in the stamping out, or partial stamping out, of that disease. He had no doubt that in years gone by a very large number of glandered animals had been shut up in dark stables and worked at night, being hardly ever seen. Extra inspectors had been appointed, and various other good things done in connection with it, and he had no doubt the result would be a very material diminution of the disease. He could not close his very imperfect remarks without alluding to a very sad subject—the death of Mr. Benjamin Cartledge, in whom he lost one of his brightest and dearest friends. He was a friend of his almost from his boyhood. They lived together in the same house, they were brought up together, and had been "sworn friends" ever since. Latterly, too, they had heard with regret of the death of others who had done good service to the profession —Mr. Briggs, of Bury, and Mr. Robinson, of Greenock. Both Mr. Robinson and Mr. Briggs had been examiners; and Mr. Briggs had been a Justice of the Peace in the town in which he lived, and very highly appreciated by his neighbours and friends. He should also mention that the centenary of the Royal Veterinary College took place during last year, and was presided over by the Prince of Wales, which was a great honour to the profession.

Mr. MULVEY thought it due to their President to pass to him a very hearty vote of thanks for his able address, and for his conduct in the chair.

Mr. WESTERN seconded the proposition, which was carried by acclamation, and suitably acknowledged by Mr. Barford.

The Dinner.

This followed the meeting, at the same hotel, the President occupying the chair and Mr. Lepper the vice-chair. In addition to the gentlemen named above, Mr. Giles Ayres and Mr. T. Donovan, of Reading, were present as visitors.

The PRESIDENT having submitted, in appropriate terms, the toasts of "The Queen," and "The Prince and Princess of Wales and all other members of the Royal Family,"

Mr. FLANAGAN proposed "The Army, Navy and Reserve Forces," observing that the class of men who are now joining the Army, although younger, were socially much better than they were 20 years ago. He was quite certain that should the occasion ever arise the reserve forces would be found of the greatest assistance to the regular army and the navy in protecting this country from invasion.

Major KETTLE made an able reply. In the course of his speech he said that as connected with the Army Veterinary Department he had always received the greatest kindness from the civil members of the profession. In going about abroad, and in England and Ireland, they had many opportunities of seeing the progress made by the profession generally, and he thought that progress very satisfactory indeed. He thought there was a great elevation both socially and professionally, and also from a scientific point of view, within the last 25 years. They also knew that the civilian members of the profession had pushed the profession on, inasmuch as they heard of their

being made Justices of the Peace, Mayors of towns, and members of the Civil Division of the Order of the Bath. In the Army they thought a great deal of that sort of thing. They had done their share too, and they would find members now holding honours for which they were not eligible until within the last four or five years. They had one member who held the distinguished service order, which was only instituted three or four years ago. Again, until quite recently no member of their profession could hold in the Army the position of C.B. in the military division, but they had now two veterinarian military C.Bs.—Mr. Meyrick and Col. Lambert. On the present occasion he wanted to call their attention to the question of glanders. In the army glanders used to be the commonest of diseases, and it was always said that it was introduced by the horses brought back from active service. In the army they had had no glanders now for five years, ending on the 31st of next March. It might be thought by outsiders that cases had been suppressed, or put out of sight; but such a thing was not possible in the army. They had to take the daily "detail," and that showed the number of horses at work daily and the number on the sick report: and as the work done by each individual horse was shown on that daily report there was no getting away from the fact, and he said the Army Veterinary Department had done good work in keeping out glanders for five years. He brought that matter forward on that occasion with the distinct object of assisting them to stamp out glanders in civil life. If they could do it in the army he maintained it could be done in civil life, although of course not so quickly. They were successful because the veterinary department of the army settled the matter, and nobody could interfere with them. They were given *carte blanche* to stamp out the disease, and they were not hampered by any question of compensation. If similar powers were given to veterinary surgeons to stamp out glanders, say in London, it would be stamped out. The question was whether it was not better to keep the necessity of compulsory slaughter altogether apart from the question of compensation. The veterinary surgeons of England should agree on one thing—which was that the power existed of stamping out by proper regulations the disease of glanders-farcy.

Mr. WRAGG next submitted the toast of the day—"Success to the Royal Counties Veterinary Medical Association," that was, he said, one of the junior associations, having first seen the light at a later period than some others; but, nevertheless, it had held its own, and had done good work. The reason of its success, he took it, was that the "men at the helm," with, perhaps, one exception, had always been good men, and men who had understood how to carry on the business. Their good friend, Mr. G. A. Lepper, who was in the vice-chair that evening, as the first President inaugurated the success of that association; and he was followed in the chair by Mr. H. G. Flanagan, who did his best to raise the association to the position it was now in. They had also been very happy in their executive officers. They had a most indefatigable secretary in Mr. H. Kidd, whose services they had very much regretted they had lost; but he was pleased to say they had a gentleman now filling the secretarial position who worthily emulated the good example set him by his predecessor. Then they had always had a first-rate treasurer, who was most vigilant in seeing that the money was spent in the proper way, and in that way only. He coupled with the toast the name of the president, of whom he might say much, but that the toast of his health came later on.

The PRESIDENT, replying, said he was sure Mr. Wragg had given the true reasons for the success of that association. If every association had had such a first president as his friend Mr. G. A. Lepper, its unquestionable success would have been assured. In Mr. Kidd they had a very excellent secretary; and he was happy to say they had, indeed, a very worthy successor; while he was sure they would never be bankrupt while Mr. Walker remained their

treasurer. He should do his best during his year of office to carry out the duties of President, and trusted he might not altogether fail.

Mr. BUTTERS, in submitting the toast of "Kindred Associations," said the advantages of those associations were so great, and they were considered by certain members of the profession of such great advantage, that they belonged to two or three of them. He coupled with the toast the name of Mr. Sidney Villar, who did his work well in connection with the Central Veterinary Medical Association.

Mr. VILLAR, in returning thanks, said that having been connected with the working of the Central Society and the National Veterinary Medical Association, he claimed for them even a greater advantage than the promotion of the profession, and that was the promotion of social intercourse and friendship among the members of the profession. As a young man, he had derived great advantage from being connected with older members of the profession through those societies.

Mr. HUNTING proposed "The Veterinary Profession." They did not need to go back to the days "when George the Third was king" (referring to a song which had just been sung) to contrast the present with the old state of the profession. Only 50 years ago they were not acknowledged as a scientific body or as an educated set of men; and the general public had the notion that the education then given to the veterinary surgeon was so much waste of time. They showed that by employing empirics all round, whereas now the empirical practitioner was having a very bad time of it owing to the public appreciation of trained scientific men. The public valued a trained expert, and were willing to acknowledge that they knew their business, and that to employ them paid better than to call in the empiric who only guessed. It had been pointed out how the different associations had raised the profession and brought about a feeling of brotherly love in the district; and when they remembered there were associations all over the kingdom they would understand how brotherly love prevailed all round amongst them now. It did not a year ago—not much. They had a little domestic difference to settle then, but all that had been settled, and they now appeared as a united family, agreeing in everything and especially in this, that the public ought to appreciate them because they were a real good lot. He did not know that the British public gave them all the credit they deserved. They not only doctored their animals, but were eternally trying to prevent the spread of disease, and making the public a present of the knowledge they possessed. He was not inclined to think that it was altogether lost. He thought if they stamped out cattle plague, pleuro-pneumonia, foot-and-mouth disease, glanders, and such diseases, the public would recognise that the men who gave them the advice how to do it were also best able to help them to cure disease. On the whole he could not help thinking that the public had the sense, good nature, and generosity to appreciate what the profession had done in the way of teaching them how to manage their animals. It was not many years ago that there was an idea that the ordinary stock-owner or horseman knew more about his animal than they did; but now they had some reason to be satisfied with their work, and the British public were satisfied with them. He coupled with the toast the name of Mr. Mulvey, President of the Royal College of Veterinary Surgeons. To no man in recent years was more owing from the profession for his energy in carrying reforms. Mr. Mulvey had finished, or nearly finished, his duties, and he had arrived at the end, not only without having made an enemy, but having added many to his already very large circle of friends.

Mr. MULVEY returned thanks, and began by saying Mr. Hunting had made reference to the advance of the profession in recent years. He would take up the thread of his discourse where he left it, a few years ago. Five or six

years ago the profession seemed to have got into a state of lethargy, and it was necessary for someone to step in and lead the way to what he hoped they might call higher things. That was done, and the result had been that they had obtained a new Charter, which had given them the many advantages which had been enumerated by their President that afternoon. Every member of the profession, as he stated, was now eligible to occupy a seat in the Council room; and he hoped they might see now for the first time for many years members of the profession, as distinguished from Fellows, elected to represent their fellow practitioners in the Council chamber. He thanked Mr. Hunting for his kind personal reference, and those present for their reception of his name, and he would add that any little trouble and exertion he had taken in the matter had been really and truly a labour of love with him. His aim and object had been, if possible, to raise and elevate the profession to a higher standard than ever attained before.

Mr. HURNDALL proposed "The Visitors." They wanted, he said, if they could, to leave a favourable impression upon the general public that they were really able to do, as a profession, what they looked to them to perform. If on occasions like the present they were favoured with the presence of gentlemen who were well acquainted with racing establishments, or were hunting or coursing men, they might create an impression of that kind. At those meetings the visitors not only heard a good deal of the working of the profession, but also had a fair opportunity of judging whether they did really represent that which, as professional men, they claimed to do. He might be asked why he suggested the possibility of such a question. Just because Mr. Hunting had reminded them that no more than fifty years ago the members of the profession were looked upon as men whose business did not call for any great amount of intellectual development. They knew from personal experience the amount of intellectual development required of them. Their studies were not confined to the period when they were attending college lectures, nor before they obtained their diplomas, but they were daily. They never could say that they had attained to such a state of intellectual development that they could not learn something else. If they showed their visitors they were not satisfied with what they knew at present, but were ever seeking to know more, such evidence would convince them they had been among a class of men whom they could look up to, in whom they could place confidence for advice. If they were really to be of service, they must prove to owners of horses, of cattle, of dogs, and all domesticated animals, that they were really able to render services which the owners, however well acquainted they might be with animals, were not able to render themselves. There was a feeling when he was a boy that a stableman knew almost as much as a man who got his living by treating animals in disease. That was all altered now; and they wanted to go on impressing the general public with the idea that they were of service to them, and that their charges were not so much money paid to enable them to earn their bread and cheese, but that they gave value for what they received. He coupled with the toast the names of their esteemed friends, Mr. Giles Ayres and Mr. Donovan.

Mr. AYRES remarked that he had so often had the pleasure of meeting and dining with that Association, that he had come to look upon himself not as a visitor, but almost as a member of the profession. He had generally responded not as a visitor, but for the Berks Yeomanry; and on that subject he might say that during the whole fortnight the Berkshire Yeomanry were out at Uffington during the manœuvres of twelve months ago last autumn, they had not a sick man or a sick horse. Many people thought they knew more than they did, and treated their horses themselves, instead of calling in a veterinary surgeon; but directly there was anything amiss with any of his (Mr. Ayres') horses he called in professional advice. As one who took a great interest in

the horse and every other animal, it was a great pleasure to him to meet members of their profession.

Mr. DONOVAN also acknowledged the compliment. The more he knew of the veterinary profession the more he respected it. Before he bought horses he always had them professionally examined, and he considered that to his own advantage. If the civil profession had had the advantages afforded to the Army practitioners he was sure glanders would have been stamped out before now.

The health of "The President of the R.C.V.M.A." was given by Mr. Irving, who said they had known and greatly esteemed their President ever since the Association came into existence.

Mr. BARFORD, replying, said that although that Association was not quite as old as some others, he ventured to think, having visited a great many of them in different parts of the country, that none was conducted on stricter or straighter lines. The value of those Associations could not be too highly extolled. He would first tutor a youth to know the habits of animals in health, for that was the best preparation for treating them in disease. He himself was brought up on a farm; he was convinced that the profession would be in the future, as it had been in the past, what they themselves made it; any advance they made or assisted in making being due to their own conduct.

Mr. WHEATLEY proposed "The Officers of the R.C.V.M.A." saying a great deal of their success depended upon their having good officers. In Mr. Hurndall they had the right man in the right place, and he had shown great energy and tact in the discharge of his duties. As to Mr. Walker, he was a most admirable treasurer, and they would have very great difficulty in replacing him.

Mr. WALKER and Mr. HURNDALL suitably replied, each emphasising the importance of a larger attendance of members at the meetings if the prosperity of the Association was to be maintained.

A number of excellent songs were rendered during the evening, and the proceedings were altogether most successful.

J. SUTCLIFFE HURNDALL, Hon. Sec.

MIDLAND COUNTIES VETERINARY MEDICAL ASSOCIATION.

THE annual meeting of the members was held at the Grand Hotel, Colmore Row, Birmingham, on February 14th. Mr. F. W. Barling, President, occupied the chair, and there were also present Dr. Barling, Dr. Motteram, Messrs. W. Hunting, London; H. Blunt, Lutterworth; Huband, Cheltenham; Freer, Uppingham; Wiggings, Market Harborough; Crowhurst, Leamington; Smith, Tunstall; Malcolm, Blakeway, Parker, Stanley, Birmingham; Collett, Dawes, West Bromwich; Trevor Spencer, Bromyard; Horton, Warwick; Beddard, Wolverhampton; Proctor, Lilehull; Gooch, Stamford; King, Newport Pagnell; Pemberton, Bridgnorth; Merrick, Northampton; Trigger, Newcastle; Green, Alfreton; Coe, Stoke-on-Trent; Olver, Tamworth; and Gould, Redditch. Visitors: Messrs. Mulvey, Byner, Lamb, Marriott, Clunes.

The PRESIDENT explained that his brother, Mr. Gilbert Barling, who was to read them a paper, had an important professional engagement during the afternoon, and he asked that the agenda should be altered so that his paper might be taken before the annual business was transacted.

The following were nominated as new members: Mr. W. Coupe, Wednesbury, and Mr. S. Webster Martin, Chesterfield.

The following gentlemen were elected members: Mr. C. Hayward, Millstone Lane, Leicester; Mr. Blunt; Mr. W. Eaton, Twyford, Leicester; Mr. Trevor Spencer, Bromyard; Mr. W. Blunsom, Cirencester.

The following paper was read by Gilbert Barling, M.B., B.S., F.R.C.S., Surgeon to the Birmingham General Hospital, Professor of Pathology in the School of Medicine, on

"THE PRINCIPLES OF WOUND TREATMENT."

Mr. President and Gentlemen,—When I was first invited to read a paper before this meeting, greatly flattered though I was by the invitation, I had serious misgivings as to attempting it, the more so when I learnt the names of those, eminent in your own profession, who had previously undertaken the task. I felt, however, that from my relationship with members of the veterinary profession I could rely upon your bearing patiently with me this afternoon if my observations should lack somewhat in interest. I have endeavoured to avoid wearying you by choosing for my paper a subject which is of paramouut interest to us both, viz., the principles of wound treatment.

Former meetings of this Society have had the advantage of having papers by Professor McFadyean and Walley on "Suppuration" and "The Putrefactive processes in Wounds," so the modern theories which direct the treatment of wounds have been laid before you by men who are authorities on such matters. To a great extent, then, the ground has been cleared for me and I shall deal briefly with the theoretical part of my subject, but I cannot ignore it altogether, and for this reason—what a man really *believes* that he will *practice*. Let me give you an example, in the treatment of cancer in the human subject. Permanent cure by operation is attained in a certain proportion of cases, this cure depending upon two factors; the one is early operation, the other is the freest possible removal of the tumour, so that as wide a margin of healthy tissue as may be shall be removed with the tumour, thus securing that what the public calls its roots shall be taken away. What influence has theory on this question of the curability of cancer? A very important one, in this way. The surgeon who believes in the *local* origin of the disease has every incentive to operate early and thoroughly, with the expectation, in a certain number of cases, that he will permanently cure his patients. On the other hand, the surgeon who believes the cancer tumour to be the local manifestation of a *constitutional disease* feels very little hope of permanent relief from operation—he does it as a palliative, he is in no hurry to extirpate the disease, and he is not careful to go as wide of it as the circumstances permit. The result is that the word "cure" to him is unknown, and he regards those who speak of cures with suspicion. Happily most surgeons are now firm believers in the *local* origin of the disease, and the result is marked improvement in the results obtained by operation. I have introduced this digression, on theory influencing practice, because I wished to emphasise this fact by an illustration altogether apart from the question of wounds, and I do this because I notice that when one gets on to the subject of the germ theory of wound diseases, feeling is apt to wax warm and to obscure the judgment, as between those who believe in the potency of germs for producing evil, and those who do not.

I have endeavoured to show why I think it important, in the case of a disease such as cancer, we should hold to sound theory as to its causation as far as our lights go, because it leads to more successful treatment. This is equally true of the treatment of wounds. If a man is thoroughly imbued with the belief that the cause of wounds doing badly is generally the presence of micro-organisms in those wounds, he is bound by every consideration which should weigh with him to do all that lies in his power to exclude such harmful things. I am pleading for something more than the half-hearted faith which existed in the early days of what is commonly called antiseptic surgery, when we were groping our way towards the truth as we now know it. In those days the application of the principles of antiseptic surgery was

often made by men who had a very faint conception of the truths on which they were acting, and as a consequence the spray and other details first suggested by Lister were almost looked upon as fetish, and the proceedings were made almost as ridiculous as those indulged in by the medicine man of a tribe in central Africa. From this condition of benightedness we have advanced until we have reached a stage of too great refinement—if possible, and operative proceedings are almost smothered in the multitude of minute details which precede and accompany them.

Accepting, then, the truth of the germ theory of wound disease, let us see clearly what is meant by it, let us take care that we do not make our treatment too cumbersome to be readily applied in daily life, and, above all, let us hold fast to those old, but well laid down principles of wound treatment which existed before the germ theory was thought of, viz., dry wounds, careful apposition of the tissues, drainage, absence of tension, elevation of the part, etc. These things are as important now as ever they were, but they are a little apt to be forgotten.

Let me first define what I believe to be the truth about the germ theory of disease. It is, that various micro-organisms find their way into wounds, and there, *under certain circumstances*, are capable of producing according to their kind, suppuration, tetanus, gangrene, or other disease. The source of these bodies which infect wounds is various; the hands of the surgeon, his instruments, ligatures, sutures, sponges, dressings, and the skin of the patient, abounding as it does with gland orifices in which micro-organisms grow. Then we have the air, or rather the particles of dust which may be floating in it, possibly water, and then any accidental contamination to which a wound may be exposed, for instance, by contact with the ground. Some of these sources of germs are more potent for evil than others. Perhaps the atmosphere and ordinary water have been too much vilified as containing a quantity of germ life. The danger from these two sources has, I believe, been greatly exaggerated. From the other sources I have mentioned the danger is real enough. You will notice I said just now that germs are capable of producing harm *under certain circumstances*. It is not true that germs, finding their way into wounds, suppuration or some other bad results *must* follow. This will depend upon several circumstances and notably upon two. These are, the amount of germ life which finds its way into the wound, and the resistance, or in other words the good health of the tissues.

Taking these two points in order, and dealing first with the number of germs finding their way into a wound, Mr. Watson Cheyne, in his book on suppuration and septic diseases, has shown conclusively that the effect produced by introducing various germs into the tissues depends directly on the dose, that is, on the number introduced. If but a few are injected, there may be no result at all, the germs dying out, apparently being destroyed by the resistance of the tissues which surround them. If the dose be increased in amount, a local inflammation may be produced without general infection of the body. If, however, the dose be large, then we have both a local and a general result; for instance, in the case of the micro-cocci, which produce suppuration, we have an abscess at the seat of inoculation and general blood-poisoning or pyæmia. With regard to the resistance of the tissues, or what we may for our purpose term the general health, it seems hardly necessary to argue the matter out. The fact is acknowledged, and was so long before the germ theory was promulgated, that well-doing after operations was promoted by avoiding operations when the subject was out of health, and by doing all that was possible to promote the general health before resorting to operative measures.

It appears, therefore, that we have two important points here for our consideration in the treatment of wounds. Operations not urgent for immediate

performance should be delayed if a man or animal is out of health and an attempt be made to promote general improvement. The other point is that we should do all we can to prevent the access of germs to wounds, consoling ourselves that even if we are not able to exclude them altogether, yet by limiting them to the smallest number possible, we are greatly promoting the rapid and safe healing of wounds.

This brings me to the more practical part of my paper. How are we to exclude germs from wounds? This I can best answer by describing the precautions I take in my operations at the General Hospital, leaving you to apply them as far as the circumstances under which you work will allow. The whole matter consists in taking pains, in cleanliness carried to an extreme degree. In patients admitted for operation for disease and not for injury we can go leisurely to work to attain the first step; it is the complete disinfection of the skin in the operation, and to which I personally attribute the most importance. In the sebaceous and sweat glands and in the hair follicles we have so many traps for the retention of numerous micro-organisms some of which, though not all, are pathogenic and capable of growing and setting up wound disease if once they are admitted. To get rid of these, if the part be hairy as the scalp, it is completely shaved, then washed with soft soap to get rid of the fatty particles which so often protect the germs from destruction, then with ether. After this cleaning, the part is wrapped up in lint soaked in solution of perchloride of mercury, 1 in 3,000, kept moist by gutta-percha tissue over it, and this dressing is applied for at least 24 hours before the operation is undertaken. In such operations as trephining for abscess or cerebral tumour, or in the radical cure of hernia, this preliminary cleaning of the skin has much to do with the successful result of the operation, which depends so absolutely upon the absence of suppuration. In operations undertaken for injury, circumstances deny the opportunity of cleaning the surface so thoroughly, but here the shaving and scrubbing with soft soap, &c., are as carefully applied as possible.

The next point to receive attention is the hands of the surgeon and of those helping him. Extreme cleanliness is again the order of the day. Plentiful scrubbing with soap and water and soaking in the same solution of perchloride of mercury, and during the course of the operation a plentiful supply of the same lotion should be at the side of the surgeon, tempting him to wash off blood or discharge at frequent intervals.

All instruments should as far as possible be sterilised by boiling, there is no other perfect way. For those which cannot be boiled, soaking in 1 in 40 carbolic acid is the best expedient, the use of perchloride solution being impossible from the staining it inflicts on metallic surfaces. Sponges I only use for operations within the abdomen, and this only because I have not been able to find any good substitute for them in this cavity. If I could I would abolish sponges from my wards and operating theatre altogether. They are frequent sources of wound infection, unless they are destroyed after once being used, a rather expensive proceeding. As a substitute for sponges, I have small masses of absorbent cotton wool rolled up into wads and wrapped up in a single layer of gauze. These are kept in a solution of perchloride of mercury until they are wanted, and are then wrung out dry when they are required. Once they have been used they are thrown away, the cost being very small. With regard to the operator's clothing, I wear a linen overall which covers me from my neck to my feet, and after each time of using the wrapper is sent to the wash.

Some other details call for careful attention. They are the selection and preparation of ligatures, sutures, and drainage tubes. As a general rule I use silk-worm gut for sutures, because they are easy to fasten quickly, easy to remove, and have little tendency to cut out quickly, this last point depending

on the fact that suppuration around them is generally absent, because they contain no meshes into which micro-organisms can creep and then set up irritation in the skin. If there is great tension when the edges of the wound are brought together, I use coarse silver wire, because it holds longer than any other suture before cutting its way out, and I also use the same material for suturing bone, as in the case of fractured patella or olecranon. If very fine sutures are required, as in suturing the uvula in cleft palate, I use horse-hair. All of these are prepared by soaking in carbolic lotion, and are kept when not in use, either dry or in solution of perchloride in alcohol. Ligatures, twenty years ago, were either silk or hemp. Then came the period of catgut, the great desire being a ligature which should be readily absorbed after its application; and, following catgut, other animal ligatures readily absorbable and having some other feature—as a flat instead of a round surface to apply to the vessels; such were kangaroo tendon, ox aorta, twisted peritoneum. For a long time catgut held the field, although it was found that the earlier ligatures were absorbed too soon, and they were made somewhat more resistant by hardening in chromic or sulphuric acid. At the present time, however, I have given up the use of catgut for several reasons. First of all it cannot be used safely in the peritoneal cavity from the rapidity with which the ordinary gut is absorbed; second, if hardened in chromic acid it is so hard that absorption is unduly delayed and the ligatures are apt to find their way to the surface some time later. A greater objection than these is the difficulty there is in making catgut quite aseptic. In its preparation the process of putrefaction has to be gone through, and it is very difficult to be sure that all the germ life in the catgut is afterwards completely destroyed. These defects of catgut have led to its being supplanted to a great extent by silk for ligatures, on the ground that the latter can be made aseptic without doubt, and if asepticity is attained the ligatures remain buried in the tissues until they are absorbed. The silk ligatures are made aseptic by boiling for at least half an hour to destroy any germ life, and then the boiled silk is kept in solution of carbolic acid, one in twenty. I use this material not only for tying vessels, but also for ligaturing the neck of hernial sacs, tying off masses of omentum, and similar purposes. The fate of the silk is eventually the same as that of catgut; it is absorbed, although much more slowly than ordinary catgut, silk taking almost as many months as gut does days to be absorbed.

For drainage I use either some material like silk in strands to act as a capillary drain, or else tubes of indiarubber or of glass. Each has its proper place. The glass has the advantage of being easily kept aseptic, and now that these tubes can be obtained of any size they will often take the place of the rubber tube. There is one place where the glass tube is indispensable, that is in the abdomen. It is, of course, not required in all cases of abdominal section, but when drainage is required a glass tube is placed with one end in the cavity to be drained, the other projecting at the wound, so that it may be frequently emptied by means of a syringe with a bit of rubber tube attached. In most abdominal sections when a tube is used it is placed so that its lower end dips to the bottom of the pelvis, as all fluids free in the peritoneal cavity tend to gravitate there. You will observe from what I say later, however, that I am not addicted to the use of the drainage tube wherever it can be dispensed with. The objection to drainage tubes is this, not that the tube itself irritates the tissues, but it may be the carrier of germ life into the deeper part of the wound through some accidental contamination, and further, when the tube is in position it becomes filled with blood and lymph in which germs can grow with greater readiness than they can if lying in contact with the living tissues of the wound. In fact the blood, etc., in the tube acts as a culture medium for the germs which healthy living tissues may destroy.

I turn now to those materials which are applied as lotions to the wounded

surfaces before the wound is closed, or in the form of dressing afterwards. These materials, called antiseptics, are legion, and each has its apostle who preaches the merits of his particular fancy in season and out of season. These antiseptics have been made too much of; at one time they overshadowed the whole question of wound treatment. Hence it is that whilst the truth of the germ theory of wound diseases becomes more and more firmly established every day, the materials used as antiseptics are often the sport of fashion, first one being lauded and then another. The great point to aim at is to be selective in the material we use, and not to expect it to do for us what we should attain by other means. In other words, if the precautions I have described in some detail be fully attended to, we shall practically exclude germs from our wounds. and there is no need for the use of antiseptic solutions, many of them irritants in themselves, to the wounded tissues. As to the dressing to be applied after the wound has been sutured, I think the virtues of the various antiseptics have been unduly lauded. When a wound is sutured and closed up, the die is cast, I believe, for good or for harm in the majority of cases. Either the wound is tainted with materials which will give rise to mischief or it is not. For this reason it is not material what the antiseptic dressing is, always provided that it complies with two or three points. It should not irritate the skin, it should not be capable of absorption and of poisoning, it should be suspended in a material which is elastic and absorbent.

Of the numerous antiseptics in use I prefer for the purpose of cleaning the skin of the patient, the operator's hands, etc., a solution of perchloride of mercury, generally 1 in 4,000. The less this is applied to the wounded tissues the better, not so much because it is poisonous, for none of my cases have suffered any harm in this way, but because it irritates the tissues and causes serous oozing into the wound afterwards, which is undesirable. This is especially the case when a large wound surface is in question, as in an amputation of the thigh or breast. In the operations on the peritoneal cavity its use is altogether contraindicated. Of those materials which may be applied to the wound as a dressing, I have only to reiterate what I said just now, they must be elastic and absorbent, and of course clean in the surgical sense of the term. The model of what a dressing should be is, in my opinion, the material suggested by the late Mr. Sampson Gamgee, and known as his tissue. Where the question of expense comes in this can be replaced by a cheaper material, as, for instance, wood wool in sheets. My own cases are almost always dressed in the same way. Next to the skin several layers of iodoform gauze are applied with a good sprinkling of free iodoform, and over this either Gamgee tissue, wood wool, or simply absorbent wool. I have such good results with this that I shall be very unwilling to change, but I must repeat here what I said just now, that I believe the virtues of particular antiseptics applied to wounds has been unduly lauded. It matters little what is used so long as it is not actually soiled with germ life; the all important details are those before and during the operation. A very useful and non-poisonous material which can be used freely to wounds is boracic acid. It is possessed of but feeble antiseptic powers, but it can be introduced into wounds in large quantities without irritating or poisoning. It is especially of use where large bone cavities have been cleared of sequestra and there is great doubt as to the part being made aseptic by irrigation, etc. The cavity should be filled with dry boracic acid before the wound is sutured, and the acid, slowly dissolving in the inflammatory exudation, is of much benefit in preventing septic changes in these wounds which are notoriously liable to troubles of this kind. Boracic acid may also be usefully applied freely dusted on wounds before the dressing is put on.

Perchloride of mercury and carbolic acid applied to wounds are too apt to

irritate the skin, and for this reason I prefer iodoform. Even the bicyanide of zinc and mercury, suggested by Sir Joseph Lister, is not free from the disadvantage of irritating the skin when applied directly to it. Those of you who know anything of the early days of antiseptic wound treatment, as first taught by Lister, will perhaps wonder why I have not drawn attention to the advantages of the carbolic spray. In those early days to which I have referred it was generally believed that the atmosphere was considerably laden with germ life, and that admission of air to the wounded tissues exposed them to constant infection from the suspended germs. To prevent infection from this source, and to destroy the germ life which was precipitated into the wound, recourse was had to a fine spray of carbolic acid playing on the wound and around it. Since, however, it has been shown that the air is the least constant source of wound contamination in ordinarily healthy atmospheres, the assumed necessity of any such device as the spray no longer holds good, and it is abolished from the practice of modern surgeons, and this with the direct sanction of Lister who introduced it, and to whose utterances on wound treatment the utmost weight attaches. What a relief it is to do without this spray only those who have had a long apprenticeship under it can understand.

I hope I have not wearied you in describing with so much detail numerous small points; my excuse is that careful attention to these constitutes to a great extent successful surgery. Yet I am not forgetful of those old principles of wound treatment which were taught and held with tenacity before the germ theory was thought of. These principles are just as important now as formerly, and whilst germs must be regarded as the absolute cause of suppuration and other wound diseases, yet there are several other important factors, want of rest, the collection of blood and serum in the wound cavity, too much tension, etc., which predispose and determine the ill-doing of wounds.

I hitherto dwelt upon the precautions to be taken with the object of excluding germ life from wounds. These may not be absolutely successful, and there may be some contamination of the wounded tissues through imperfect asepsis. If this be so, what are we to do to prevent the growth of germs and the evil results which follows? It may be suggested that we should use some powerful antiseptic to wash the wounded surfaces and so to destroy the germs. The objection to this I have already pointed out; it causes such free serous oozing into the wound cavity, and it gives no security that the germ will be destroyed by the momentary exposure to which they are subjected by the antiseptic agent. What steps, then, are we to take in order to prevent the few germs in the wound from multiplying and doing harm? The first thing to attend to is the complete stoppage of hæmorrhage. It would seem almost unnecessary to refer to such an elementary principle in wound treatment, but I am speaking not so much of the closure of those larger sources of bleeding to which, of course, everyone attends, as to the stoppage of the oozing which takes place from vessels which hardly call for the application of ligatures, but yet are capable of allowing a considerable collection of blood to take place in the wound cavity after the incision is closed. It is, therefore, to the attainment of a "dry wound" that we must direct our attention. This is secured in various ways, some of which are available, if not all, in every kind of case. After the larger vessels have been secured, sponge pressure maintained for a few minutes may be all that is necessary; if not, douching with water as hot as it can be borne with the hands is valuable. I have given my reasons for sparing use of strong antiseptic lotions, such as perchloride of mercury, which have some styptic effects, and I have just as much dislike to those applications which are known as styptics, as, for instance, the Tr. Benzoin. If after the use of sponge pressure and hot water oozing still exists, then the application of firm and even pressure is of the utmost importance after the wound has

been closed. This is, of course, obtained by careful bandaging over suitable dressings. In situations such as the axilla or neck, where equable pressure by the dressing cannot be provided, then an exit for blood and serous oozing must be provided by judicious drainage. I have pointed out why I think the use of drainage tubes is generally undesirable; they provide a site in which germs, if present, can grow without being in contact with living tissues which act as their destroyers, and, further, up the drainage tube germ life may grow from the surface and infect the deeper parts. But in some cases we have to choose the lesser of two evils, and if we are not confident of the asepticity of our wounds, it is better to give exit to the blood, etc., from the wound by using drainage than to shut the incision up closely, leaving the germs to develop in a nidus of blood and serum, which is so well suited to their needs. When drainage is used it should be so placed as to secure the evacuation of the most dependent part of the wound, so that there shall be no accumulation in pockets, and the drain should be removed at the first dressing or as soon after as possible. *(To be continued.)*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE annual meeting and dinner of the North of England Veterinary Medical Association was held on February 17th, at the Hotel Metropole, Newcastle-on-Tyne, the President, W. Hunter, Esq., in the chair. There were also present Professor Pritchard, Dr. G. Murray, Veterinary-Major Durrant and Messrs. Rutherford, F. Finney, J. Isherwood, J. Tudor, C. Stephenson, D. Macgregor, G. R. Dudgeon, H. Hunter, A. Hunter, A. Rider, J. Moore, J. Gofton, T. Aitken, J. Aitken, F. R. Stevens, F. Johnston, J. E. Tully and the Secretary.

New Members.

It was proposed and carried that Messrs. Rider, Isherwood, Niell and Davidson be elected members.

Mr. Dotchin and Professor Wilson were nominated for membership.

Veterinary-Major Durant was elected an Honorary Associate.

British Institute of Preventive Medicine.

The question of a donation to the British Institute of Preventive Medicine was again brought before the members, as was also a letter bearing on the same subject from the National Veterinary Association.

It was resolved, "That the Society subscribe directly to the Funds of the British Institute of Preventive Medicine, and that five guineas be given, to be supplemented by further subscriptions from the members."

PRESIDENTIAL ADDRESS BY MR. W. HUNTER.

Gentlemen,—In the first place I beg to offer a word or two of explanation how I came to be placed in the position I now occupy. I forgot our last meeting until it was too late, and thought nothing more about it until I met our worthy representative in the Council the next day, who informed me to my great surprise and dismay that I had been elected unanimously President of our Association. I thought the matter seriously over for some days and not without considerable misgivings did I arrive at the conclusion—since you had so graciously in my absence bestowed upon me this high compliment, to accept office. Having done so, gentlemen, I beg to thank you for your great kindness in electing me President of the North of England Veterinary Medical Association.

Ours is one of the oldest of these Associations in the country. It came into existence in or about the year 1866 and had as its first President our esteemed townsman and colleague, Henry E. Wilkinson, Esq. For some years the

Association was in abeyance, but sprang into renewed vigour, and now is I am glad to say, in a most flourishing condition, although a secession of members took place only two or three years ago to form a local society of their own in South Durham, which is also now growing and prospering. These Associations are of immense benefit to the profession. The social intercourse which they bring about amongst the members, rubs off little animosities and grudges which may have inadvertently arisen, and enables us to make friends with others whom we might never have met otherwise; whilst the reading and discussion of scientific papers and communications complete the objects of the Association, which aims at binding us together as veterinary practitioners, promoting union and brotherly love amongst us, assisting us to work together for our mutual improvement and also for the public good. I think very few veterinary surgeons now hold themselves aloof from one or other of the Veterinary Medical Associations, and those who do must and will find it to their own disadvantage.

I trust that our meetings during the present year will be well attended, that the papers read will be both interesting and practical and be well discussed, and I ask you to give me your kind assistance to uphold the honour and prestige of the North of England Association and make our meetings pleasant and enjoyable, and our intercourse with each other of the most cordial description.

The first subject to which I will draw your attention this afternoon is that of the preliminary examination. I give it a hearty welcome, and I say it has not come a day too soon. Only educated men will now enter the profession, and this will elevate and raise us socially, for I am sorry to say the social position of veterinary surgeons is not satisfactory. Limited means and great competition compel us to spend the greater part of our time in professional work, leaving us but little time to spend in public life, but latterly I am glad to say veterinary surgeons have been elected by their fellow townsmen, not only Town Councillors but chief magistrate, and some have been created Justice of the Peace. I have not the least doubt but those who have been honoured with these offices will acquit themselves with credit to the profession and to the satisfaction of those who have placed confidence in them. Politically veterinary surgeons are in the background. I would like to see us represented in Parliament, for many things crop up during discussion in that large assembly where a veterinary surgeon would be of great benefit to his professional brethren. He might bring in a private Bill whereby veterinary surgeons might be exempted from serving as common jurymen. Why should we be liable to be called upon, when chemists, dentists and medical men are exempt. The time is now past when a student will be allowed to enter College without knowing the rudiments of grammar, let alone a foreign language. This I have long considered a disgrace to the profession, taking into consideration the facilities at command, even by the poorest in the land, to obtain a good sound English education. We must progress with the times—keep ahead if we can, certainly not be left behind in the race of life. It is certainly a long leap from the old preliminary to the new which comes into force in July. To be well acquainted with three books of Euclid, resolve Algebraic Equations and know a foreign language, will require a better student, and this in turn will cause us to be respected by those who in the past have looked at us somewhat askance. Science has progressed of late years with such leaps and bounds that it requires a student to be thoroughly well grounded to profit by the teachings which a less educated man would find it impossible to follow. This preliminary exam. will not, in my opinion, debar many students from entering the profession.

The next topic to which I would draw your attention is the four years curriculum. Now this will prove a serious obstacle to both students and parents,

especially the latter. It means a great increase of expense which many will find themselves unable to afford. This will not matter much, except to a veterinary surgeon who wishes his son to follow in his footsteps, and looks forward to the time when his son will assist him in his practice and eventually succeed him. If Mr. Hunting's estimate of the average income of a veterinary surgeon be correct, viz., £150 per annum, then it follows that many men will be unable to save anything from their incomes whereby to send their son or sons to College. This is where the new rule will press most heavily, and it will be well if it does not prove a course of multiplying unqualified men. Four years is, in my opinion, none too long to learn thoroughly all a veterinary surgeon ought to learn at College, even if he applies himself assiduously to his studies. To read over the syllabus of the great number of books to be studied and learnt during the four years, let alone to commit their contents to memory, is sufficient to stagger most men. But if they pass in all the subjects set forth in the synopsis, then I am not afraid but many of them will make good veterinary practitioners; while others will be able and fitted to extend their studies into specialities such as bacteriology and preventive medicine, which under the old régime few were fitted to do. But, say some, why all this expense? the game is not worth the candle, for are not the incomes of veterinary surgeons less than they were, say 20 years ago? That may be, but the progress of the nation requires it, and if as a body we wish to be thought and recognised as gentlemen, and to occupy the same pedestal as the medical man, then we must put our shoulders to the wheel and be determined as a first step to occupy the position of educated men. The intended curriculum and its attendant expense will benefit us by preventing such a great influx of new members into the profession as we have been accustomed to of late years.

As the education of a veterinary surgeon in the future must cost a large sum of money, it follows of necessity that our fees must be increased. How is that to be brought about? By union, gentlemen; by combining and agreeing to charge a certain stipulated sum for a visit, and certain graduated charges for the examination of horses. I think it an anomaly and unfair to charge the same sum for examining a horse worth £200 as for another worth £20. If we stick to each other we will get what we in fairness demand, but if we go in for cutting tactics, and compete with each other who shall charge the least, then I am quite certain we will be going against our own interest and the welfare of the profession. To charge only a small sum for a visit or professional opinion lowers us in the eyes of a client, who comes to the conclusion that if we place only so much value upon our services they cannot be of much importance; but if we ask a fair, reasonable sum, commensurate with the service rendered, although our customer may grumble and tell us our charge is high, yet he will pay it, and we will retain his confidence, respect and esteem. At the present time I am sorry to say many of our incomes, especially those derived solely from country practice, will be much reduced owing to the great agricultural depression which exists and which is pressing so heavily upon the British farmer. Many panaceas have been put forth during the past few months for the alleviation of this distress and to bring about a better state of affairs; but opinions are so divided upon the matter that I am afraid little will be done until public opinion becomes more unanimous regarding the causes which have brought about this state of things. If I may be allowed to give an opinion on matters in which I am only indirectly concerned, it is this: that the agricultural depression is due to the small prices obtained for the commodities which the farmer has to sell; the cause of the small prices is not the excessive supply which the British farmer has produced, but solely the large importation of foreign goods. Take potatoes. Last year the Danish, Belgian, and Dutch farmers bought a supply

of seed from Scotland, and now they have sent back to us such a quantity as to completely glut our markets—of such superb quality as to render the sale of both English and Scotch tubers almost impossible. And so with almost every other article one can mention. Until some alteration in the fiscal policy of the country takes place we must expect this state of affairs to continue.

The next topic to which I wish to draw your attention is that of the Fellowship. The Degree was created some 12 years ago as a higher degree than Member, and it was provided that examiners henceforth be selected solely from those who held the title of Fellow. This I think was a wise proviso, and has worked well during the period it has been in operation. For I think it essential that an examiner be not only well up in practice but also in theory. Previous to the institution of the Fellowship I believe there was no way of testing an examiner on his appointment. By the Fellowship Degree we know now those who have kept up what they learnt at College and with the more recent advances in science. The examination papers which I have seen for the degree of Fellow have been both searching and severe as to a man's knowledge of veterinary science, and if he is able to answer the questions thoroughly he must be well up in chemistry and physiology, in veterinary medicine, surgery, and hygiene. What percentage of marks constitutes a pass I do not know, and as I have no thoughts of going in for the exam. I have not been inquisitive enough to enquire; but if the examiners demand, say 75 per cent. of marks, the examination cannot be considered either superficial or less severe than necessary. The public trouble not themselves with a degree. A Fellow is not more sought after than a Member. At one time I spoke very disparagingly of the degree, and I still think the examiners must be far too lenient, as the percentage of passes since its institution has been a remarkable one I think. As a means of selecting well-read examiners I consider it a necessary degree and nothing more.

In drawing these few disjointed remarks to a close I will briefly review the prospects of the veterinarian. I cannot congratulate you that the outlook for the year is a roseate one, on the contrary, what with bad trade in the four great industries of the country, viz., coal, iron, shipping and farming, we must expect a diminished demand for our services until the tide again turns for more prosperous times. Then again, when we look at the great yearly influx of members to the profession, serious thoughts arise where all these young men are to find remunerative employment. This, unfortunately, is only a small country, and the places are few and far between where a veterinary surgeon is able to make a living which has not already one located there: but there are outlets, such as India, where a veterinary surgeon has no competitor nearer than from here to London; there is also South Africa, and some parts of America; these countries I trust will be able to take our surplus practitioners for many years to come. Then, again, the great sale of proprietary medicines does the profession much harm, and it behoves us to consider what is best to be done to lessen their pernicious use. I hope some gentlemen will bring up this topic for discussion at some future meeting. But, gentlemen, looking back, we have great cause of rejoicing at the great strides which the profession has made during the last decade or two; and looking forward we have cause for congratulation. Commencing the year with the new Charter—which was nearly wrecked, I am sorry to say, by the selfish opposition of a mere handful of members, whose futile opposition against such an overwhelming majority was rated by the Parliamentary Committee at its true value, and rejected. We have the Charter made law, and although it does not contain all we require, it is a great advance on the old one, and I trust will be sufficient for the requirements of the profession for some years to come. I would like to have seen a clause inserted in it whereby it rendered professional advertising illegal. Then again we have the preliminary examination

and the extended curriculum of four sessions of eight months each, which will fit our young men who come through the trying ordeal successfully for positions to which we have a just right and claim, but to our chagrin are held by others who know little or nothing of animals or animal diseases. We have gradually risen for a number of years in the social scale, and with the changes just mentioned, so nobly carried out by the Council of the Royal College, we will shortly occupy the position attained by other learned professions, and for which we have so long and honourably striven.

An interesting discussion took place on the President's address, in which Messrs. H. Hunter, J. Gofton, Moore and Rutherford took part, after which the President replied to the remarks of the various speakers.

GLANDERS.

Professor PRITCHARD delivered an address on glanders. He said it was not his intention to preach them a very long sermon, for he thought long sermons must have a great deal of backbone in them to make them interesting, like other sermons they had sometimes to listen to. Therefore he would endeavour to deal with this matter of glanders in such a way as to excite, if he could, a good discussion.

Firstly, then, he would say, speaking of the cause of glanders, that he did not believe for a moment that it was possible to have the disease without a glandered animal. He dared to say that in reply to that he would be asked the question—"Well, where do they first come from?" In reply to this he would say "a conglomeration of circumstances." They could put what meaning they liked to that, but at the same time he believed it was impossible to produce or cause glanders without a glandered horse. He had come to look upon glanders and farcy as one and the same thing—that it was the same disease exhibiting itself in different portions of the body. He said exhibiting itself—he meant by that, that the symptoms which became apparent to them as experts might be seen in glanders in one part of the system, while in the case of farcy they appeared upon the surface, usually in connection with the limbs, or, speaking generally, the large absorbents. It might be down the channel of the neck, over the side of the face, on the inside of the arm, on the inside of the thigh, or anywhere where the absorbents were found. But whether it be one or the other, whether it be glanders as they were told that it was, or farcy, as farcy he looked upon it as due to the same virus—the same disease exhibiting itself in a different way. He had never seen a *post-mortem* examination—and he had seen some thousands—he had never seen a *post-mortem* examination in a case of farcy where there had not been indication of the glanders in the lungs.

The next important point was that bearing upon the symptoms by which they could recognise the disease. He might say at once that there were some causes which it was impossible to detect. But first they would think for a moment of the symptoms whieh were usually spoken of as indicative of the malady of glanders. These were—a discharge from the nose of a peculiar character. He said of a peculiar character. It was said to be sticky, and in some instances it was thick and purulent—a discharge—thick matter; while in other cases it was as clear as the white of an egg. But under all circumstances it was of a sticky nature. That was one of the symptoms to put down to glanders. Then another was the enlargement of the glands of the inner surface of the jaw. It was said to be adherent to the internal surface of the jaw; and they had always with this a discharge from one or both eyes. It was said—and he believed it to be correct—that when discharge from the nose was from one nostril it was always from the left side, and the most extraordinary thing was that not only in glanders but in several other diseases—and this applied to human subjects as well as to horses—the symptoms were

seen on the left side of the body if they were on one side only, He had put the question many times to the first medical men in London, as to why that should be, but he had never got the answer he required. He did not think anybody could answer it. That it was a fact, however, there was not the slightest doubt. He had proof in what had unfortunately happened to his own brother. He became inoculated with glanders on the inner surface of the right thumb by puncture, and all the symptoms, so far as the surface of the body was concerned, appeared on the left side.

Another symptom that was usually attributed to glanders was an ulcerated condition of the nasal chamber. Perhaps of all the symptoms of glanders there was nothing more diagnostic than these ulcers. In the early stages of the fever, before it became ulcerated, there was a little swelling. This broke up into pieces and came away with the discharge. As a consequence there was depression, having a ragged margin, which having been once seen, could not easily be mistaken, That of all others was probably the most diagnostic symptom of the disease. In the absence of this absolutely ulcerated condition of the lining of the membrane it (the membrane) presented the appearance of a dull blue colour—"a leaden hue" as it was commonly expressed. He had always described it in another way. It put on the appearance more of the skin of a washerwoman's hand. The membrane looked soaked, if he might so express it. In some instances, but not frequently, we got a fœtid condition of the breath. That was when the lungs were involved to a very considerable extent.

Associated with those symptoms, so far as the head was concerned we very frequently had symptoms of farcy, not perhaps as marked as he had pointed out in his early remarks upon it—not so distinct probably. But we had a swelling about different parts of the body. There might be a lump on the side of the chest; there might be an enlargement in other parts of the body, or we might have what he might more definitely describe as farcy enlargement in the course of the big absorbents.

If we met with a horse having all the symptoms he had described, there would be very little difficulty, he thought, in coming to the conclusion that we had got a case of glanders, or incipient glanders. He would not have us be in too big a hurry. There was not a symptom he had named but they could find in a horse not suffering from glanders. He explained what the symptoms might arise from, and went on to say that as proof that what he was arguing was correct, the whole of the scientific world in connection with veterinary surgeons was now hard at work to find out something which would enable them to be more definite in their opinion as to whether an animal was affected with glanders or not. What were they doing now with mallein? What did that indicate to them? Was not it a proof that they might have cases over and over again in which it was impossible to say that it had anything to do with glanders? Was there proof that there were cases where it was very difficult to determine whether an animal was glandered or not? He could call to mind and give chapter and verse for scores of cases. He related the circumstances attending an illness of an old grey horse which showed none of the symptoms he had been talking about. There was a little watery discharge from the nose, and the animal was in an unthrifty condition. But beyond that nothing could be seen. It occurred to him that to be right he should mention that the unthrifty condition of an animal was not a symptom, although frequently we found it associated with glanders. It was a fact well known that horses might be fat and sleek and yet be glandered. He could assure them that that animal showed no symptoms such as he had been talking about excepting a little watery discharge from the nose. But being suspected and destroyed they found an ulcerated condition of the membrane.

What, then, were we to do? If we were under a suspicion that an animal

had got the disease, not a bad plan was to administer a dose of purgative medicine. By that means symptoms that were only partly developed would become wholly developed.

With regard to mallein, he had not had practical experience of it, but he had read what had been written about it pretty carefully and he had come to this conclusion—that the crowning question with regard to it had not been answered. That was to say, so far as he could gather, when an animal was inoculated with it and that animal was glandered, certain symptoms would exhibit themselves, proving that it was glandered. The horse would show symptoms of diffuse swelling at the part where the inoculation had been. But other symptoms of glanders would make themselves manifest. He could not help but mark that in one instance those symptoms all passed off and yet the animal upon being destroyed was found to be glandered. He failed to see where the advantage was in using this stuff. He saw very considerable disadvantage; and until he knew something more about mallein no one would test one of his horses with it, because he thought they were far more likely to produce a case of glanders than determine whether there was one or not.

He would draw attention to another point, which he thought worthy of a little publication. When they had an animal that they suspected of being affected with glanders—that was to say when the symptoms were not sufficient for them to decide within their minds that the horse had glanders—they had recourse to the thermometer. He could assure them that he had destroyed several animals which had shown no symptoms that would enable one to say the animal was glandered. They were simply guided by the thermometer, and up to the present time they had succeeded in every instance. That was to say that every one they had destroyed had proved to be glandered. If they had a suspicious case—if we found that for weeks together the temperature was irregular—that it was running for 101 to 102 and to 103, and then going back to 101, taking into consideration of course all the surroundings—that the animal had been in a stable where glanders was and such like—they would be pretty safe in having that horse destroyed. If they did determine that this irregular condition of temperature was an indication of glanders they would have gained a very considerable point.

He described the difference between farcy and what was called lymphangitis. In a case of farcy they had always ulcers. He had met with a case of lymphangitis where there was ulcerated condition of the absorbent and that, to an ordinary observer, had all the appearance of farcy. It was a serious thing for a veterinary surgeon to go into the stable of a client and ask if ever he had had farcy there because a horse had a bad leg. They might have ulcers with lymphangitis, and he urged them to be careful when they got a case of this kind before putting it down to farcy, unless there was some other indication about the horse's body than one leg being enlarged, If the symptoms were confined to one leg he advised them to have a care before they took it as a case of farcy.

Speaking of prevention, he remarked that London had the credit of turning out all the glanders into the country, and if a case of glanders happened anywhere else than in London it was said that it had been imported from the city. He would take the part of London just for the moment, and he could tell them that in the north they were not free from glanders. They might go further north over the border and they would find glanders. Mr. Rutherford would be able to bear him out in that respect. He believed the front of horse boxes did an immense amount of mischief. If he sent a horse by rail he put a nose bag upon it. Than the coarse canvas in the horse box there was no better holder of the virus; and he had no doubt that scores of horses were inoculated in that very way. The railway companies should take up the question. He was adviser for a large firm in the way of buying horses in

Scotland, and on his advice they travelled all their horses—at the risk of taking cold—in open trucks in preference to horse boxes. He had not the slightest doubt that in particular firms glanders had been more than once introduced by Scotch horses.

Discussion.

Mr. H. HUNTER said that there were one or two things in Professor Pritchard's lecture he could not quite agree with.

He had experience eight or nine years ago in a very large outbreak of glanders and farcy, and he could assert there were many cases of farcy that recovered, and they were even working at the present time, and he could not understand how it was that the disease had not reasserted itself, if, as the Professor had said, the lesions were always found in the lungs of horses suffering from farcy and that they never recovered; he should have thought that if those horses still had their lungs affected the stable would have been affected again ere this.

Mr. MACGREGOR did not think that horses suffering from farcy ever recovered from the disease, and gave an interesting account of a serious outbreak he had in his practice some years ago. They did apparently get better from farcy, but in his opinion they were a source of great danger to the rest of the stud.

Mr. A. HUNTER also said he had known several instances of horses suffering from farcy to recover completely, and that they had not had another outbreak, which proved that the animals had quite recovered, he thought.

Mr. RUTHERFORD, in speaking in support of Professor Pritchard as to the spontaneity or otherwise of glanders or farcy, said it was his experience and it was his opinion that neither condition, and he believed they were one and the same disease, ever originated but by contagion. As one proof among many, he instanced Australia, New Zealand, and he believed Cape Colony; in all of which he said immense numbers of horses were bred, and there glanders or farcy, like one or two other undoubted contagious diseases was unknown. He referred to the systems of inspection and quarantine in operation, which in the case of Australia at any rate was so admirable and so efficiently administered, that while lately glanders had been actually conveyed to its shores it had nevertheless been effectually shut out.

After giving his experience of the disease generally, in which he emphasised, as an aid to the diagnosis of doubtful cases, the value of the clinical thermometer, he said it was his opinion that it was folly to apply repressive measures to stamp out glanders unless the same measures were applied in so-called farcy, and suspected cases.

Mr. F. R. STEVENS asked Professor Pritchard the relation between tuberculosis and glanders. He quite agreed with Professor Pritchard with regard to horse boxes, and was of opinion that the matter should be taken up by the veterinary surgeons who attended railway companies' horses. He thought if they would consider the history of their cases it would be a great help to their diagnosis of glanders. He believed that nothing would be able to bring out an isolated or incipient case of glanders more than a dose of physic. He did not regard Professor Pritchard's remark about mallein producing glanders anything more than a joke. The stuff had not in his opinion been sufficiently tried for anybody to give a definite opinion as to whether it was likely to be of a diagnostic value or not.

Veterinary-Major DURANT recommended the use of the thermometer in doubtful cases.

Dr. G. MURRAY said the remarks made by Professor Pritchard with regard to the use of the thermometer in detecting the early stages of glanders were to him of special interest, because glanders in many respects was a disease

which might be compared with tuberculosis. Tuberculosis was an extraordinarily rare disease in the horse, but in many ways he thought the diseases were alike. The thermometer was of service in detecting tuberculosis. Speaking of mallein he remarked that it greatly increased the intensity of the symptoms for the time being, and in that way he took it mallein was of diagnostic value. He did not think that mallein could cause glanders.

Mr. GOFTON asked if Messrs. Hunter had had an opportunity of making a post-mortem of these so-called cured cases. His opinion as to stamping out the disease was—slaughter and reasonable compensation.

Mr. A. HUNTER said he had made a post-mortem examination of a good many but he did not know that he had got a particular record of all the cases that apparently recovered.

Professor PRITCHARD did not believe for one moment that a horse affected with farcy had ever recovered. They might so repress the disease that the animal was apparently cured, but he would rather think that this case was not farcy but simply a case of lymphangitis.

Mr. HUNTER remarked that in the case he alluded to there was glanders at the same time in the stables adjoining.

Professor PRITCHARD had never seen a case of farcy where the lungs had not been affected, and if that was so he did not think they were going to cure a case of farcy. Diabetes was very frequently associated with an attack of glanders. It was particularly noticeable in the early stages of the disease. He could not come to the conclusion himself that there was much relation between tuberculosis and glanders. From the fact that horses which very seldom became affected with tuberculosis so frequently become affected with glanders, he thought there was very little relation between the two. The microbe form of tuberculosis was different altogether from that of glanders. He was in favour of compensation to owners of animals destroyed. But they had some funny people in London as well as elsewhere, and if anything like successful compensation was granted for the destruction of horses, he did not think it would be very long before they would find one or two hundred people inoculating horses to get compensation. He agreed that compensation should be given if they forced a man to destroy his animal, but they would have to be very careful how they did so or they would open the gate to fraud very wide. To prevent the spread of the disease they could do a great deal if they liked, particularly in large towns. They should introduce some law or local act to improve the stables. In London one of the great causes of glanders was the miserable condition of numbers of stables. Water troughs were another cause of the disease. The horses did not take in the virus in drinking. It was by horses' noses rubbing together that the animals became inoculated. He approved of a few ornamental standpipes being provided.

On the motion of the SECRETARY, seconded by Mr. H. HUNTER, a hearty vote of thanks was accorded to Professor Pritchard.

The Dinner.

Subsequently in the same hotel the members and friends sat down to dinner. The President occupied the chair, and on his right sat the Mayor of Newcastle (Mr. E. Culley), whilst the Sheriff of Newcastle (Mr. Riley Lord) occupied a chair on his left.

The PRESIDENT gave "The Queen" and "The Prince and Princess of Wales and the rest of the Royal Family," and both toasts were loyally responded to.

Mr. F. T. FINNEY proposed "The Army, Navy and Auxiliary Forces," coupled with the names of Major Durant and Mr. H. Hunter, both of whom suitably replied.

Mr. J. W. T. MOORE submitted "The Royal College of Veterinary Surgeons." In his opinion the Royal College of Veterinary Surgeons endeavoured to the

very best of its ability to look after, in the most thorough manner, the interests and the welfare of the veterinary profession at large. Although for the last three or four years a considerable amount of dissension had occurred in the profession, more especially with the object of removing the disabilities of the members of the profession which they knew were constituted by the 9th clause of what he might term the charter before the last—the one which indicated that ten years from the passing of that clause only Fellows of the Royal College of Veterinary Surgeons should be eligible for seats on the Council or for seats at the Examining Board, it turned out that after one man, Mr. Kidd, had initiated the agitation the year before last, the unanimous voice of the profession declared that, in its opinion, the time had arrived when the rescinding of the 9th clause was advisable, and was demanded by all. In fact, the six vacancies for members of the Council were filled by candidates who were pledged to the total abolition of the 9th clause and the restoration to the members of the profession the privileges and powers conferred upon them by the original charter of 1844. Following up the agitation, as most of them were aware, was a remarkable condition of matters—a condition that had never been before in the existence of their body as a profession—the remarkable fact that again the six candidates who were pledged to the abolition of the 9th clause were returned by a huge majority. The consequence was that those twelve members, with two or three who were known as the reform members of the old Council, constituted a majority of the Council, and they carried the day. The result was that the Council applied for a new charter. A certain small section of the profession raised what some people called a factious opposition to it. But the charter has been granted, and it now stands that members of the profession are eligible to take positions as members of the Council, which, as they knew, was tantamount to their parliament. But only Fellows of the College were eligible for seats on the Examining Board. Personally, as a Fellow of nearly thirteen years standing, he supported the rescinding of the 9th clause. It did not matter a fig, so far as he was concerned, whether a member was upon the Council as a member or a Fellow, because he considered that one had an equal right with the other to a seat there. As far as the Examining Board was concerned, he was quite in accord with Mr. Rutherford. He did not care whether they got a member of his own profession so long as they got the best man. If a man was an expert at his work he was able to find out what a student knew. It was not a question of harassing students. The Council, he went on to say, under the new charter had asked for and obtained powers to increase the stringency of the matriculation examinations and to extend the curriculum. He agreed that the time had arrived when such a course was imperative. He thought as a profession they would be amply repaid for the arrangement they had made, although in his own day two sessions of slightly over five months were considered sufficient to enable a student to go for his examination, and if he was successful to come upon the world as a duly qualified member of the veterinary profession. But since that time science had made very rapid strides, and it is necessary that the advance in their curriculum should be in accord therewith. He considered they had taken a right step, although no doubt it would press hard upon some, and would deter many otherwise really eligible and good men from entering the profession, owing to the question of £ s. d. He proposed health and prosperity to the College, coupled with the name of Mr. Rutherford, of Edinburgh.

Mr. RUTHERFORD, in the course of his reply alluded to the recent regulations in regard to the preliminary examination. He said it could not but come to his knowledge, as no doubt it had come to those present and to the profession generally, that the system hitherto was defective, and had resulted in men of an educational calibre inferior to the requirements of the present day having gained an entrance to the veterinary profession. The profession had expressed

a strong desire to raise itself to a level approximating or equalling the sister one, and he could not see how they could hope to do so unless their graduates were educationally equal. He did not say that he had so high an aim, but there could be no doubt the profession had made great strides. With regard to the requirements of the Royal College, he was glad to know that in future men would, in addition to passing in higher arithmetic, and some foreign language, have to pass what he hoped would be a stiff examination in English. It was in his knowledge that men had passed their preliminary exhibiting a smattering sufficiency of French, German, or Latin; but whose English—as judged by their correspondence—was so deficient as to occasion him to wonder how their passing had come about. It should be borne in mind that our graduates went out to practice in this country, in India, in our Colonies, and in America where English was placed first as a means of expressing our ideas; and while he placed a high value on a thorough knowledge of modern continental tongues, it was of a higher importance that the veterinary surgeon of the future should be a good English scholar. He would then be better prepared to fight the battle of life, and do his part in maintaining the social position of the profession.

One thing he would like to refer to; they were aware that men holding certain educational certificates were exempted from passing the examination imposed by the Royal College. In this he thought there was a loophole, and it was open to this objection, which he thought was a serious one, that we were not in a position to know what kind of an examination such certificate actually represented. For this difficulty, if it was one, he thought there were only two remedies: either every man should undergo the Royal College educational test, or those bodies whose certificates we accept as exempting should, as some guarantee of equality of value, accept an educational certificate given by the College to those who come up to its requirements. He did not see why other professional bodies should not accept our certificate as an exemption, just as at present we do theirs. The certificate, however, would require to be issued by the College, not from a school. With regard to the professional examinations, he would only say he felt assured that the Royal College felt in this the importance of the trust imposed upon it by its Charters, and by the requirements of the public.

The duties of an examiner were not always easily carried out to please everybody concerned. This, however, he could say: they were, he believed conscientiously and loyally performed; in this some of the younger members of the profession whom he saw at table would no doubt support him. It was not uncommon to hear of men who were said to have fluked through. Well, he was prepared to admit it might happen sometimes, but while doing so, he asserted that it was becoming more difficult. The examinations as applied were a real test; the one doubt in his mind being, were there not too many of them, and would we not have stronger brained men, with the same scholastic work and half the exams.?

The toasts of "The Corporation and Mayor of Newcastle-on-Tyne" having been proposed and responded to,

Mr. G. R. DUDGEON proposed "the sister profession." Having acknowledged Mr. C. Stephenson's efforts to bring the two professions together, he said the work of the sister profession was very strongly interwoven with theirs, although the former was a higher profession. They were doing a great deal of work hand in hand in regard to the very paper they had discussed that afternoon; glanders was a disease which could be conveyed from an animal to man. A more loathsome or horrible disease it was perhaps impossible to conceive. Besides that, there were the questions of tuberculosis, anthrax, and a great many more. All were diseases which could be conveyed from an animal to man. A medical man must become conversant with them in the

animal before he could recognise them. Even in man he could be assisted in these to a very great extent by the veterinary profession. There was no doubt they had a great deal to learn of the sister profession. The latter had got the start of them, but they were trying now to follow in their footsteps. The sister profession began in a small way. Their examinations were not always as difficult as they were now. The veterinary profession were following slowly in their footsteps. They were running a race to get on a par with the medical man, and he thought in time they would succeed. There was one little difference, and it was a difference that would always tell. The medical gentleman had always to go in by the front door. He had his hat carefully taken from him, and the servant waiting upon him. The veterinary surgeon had to get in by the back door. He thought in time they would get up to that.

Dr. MURRAY, in replying to the toast which was heartily received, said there were a great many things which were of interest to both professions. He instanced anthrax and tuberculosis. The medicals owed a great deal to the work of the veterinary surgeon in these diseases. Rabies was another. The steps which the veterinary surgeon had taken to put an end to this disease in animals and to prevent it spreading, were of course also of service to the medical profession. Those diseases which were transferred from the animal to man became more rare in man as they became more rare in animals. It was a most important question as to how the virus was transferred from the animal to man. It was frequently transferred by the milk of the cow. It had been his duty to perform *post-mortem* examinations upon children at the Children's Hospital. In the past year many cases had come under his observation, and some 30 per cent. on *post-mortem* examinations showed tubercle. There was no doubt that tuberculosis in children was very largely communicated to them by the uncooked milk of the cow. The bacillus in the milk swallowed by children not in a state of health was capable of starting the disease. That, he had no doubt, was the reason why mortality among children was in all large towns extremely high. His whole subject of course came under the name of comparative pathology. They owed a great deal to Mr. Stephenson for his great liberality to them at the College of Medicine. He had presented the College with a bacillus laboratory. The late Dr. Heath, who took a great interest in this subject, had handsomely endowed a lectureship so that this subject might be taught. He hoped the classes at the College of Medicine, which would be conducted upon this subject, will be attended not only by the medical profession but also by the veterinary profession.

The SHERIFF proposed "The North of England Veterinary Medical Association." He observed that this was an age of trades' unionism. Trades' unions had done a great amount of good. But they could have too much of a good thing, and there were some grave dangers probably ahead in connection with the further development of trades' unions amongst the great masses of the people of this country. This association, however, was not a trades' union. It was, he took it, an association for giving opportunities of social intercourse among its members, and also for raising the profession to a higher social status. In the latter respect they had his most cordial approbation. He was amused with the observation about going in at the back door. He recognised that in the last few years there had been a very great advance in the profession, and there was now very little difference between the medical profession and this. The veterinary profession had to deal with the animal creation only. He was very much struck with the observation Dr. Murray made. Apart from any other consideration of being there he felt amply rewarded in having heard the observation. The question of tuberculosis was causing the Sanitary Committee of the City Council serious consideration. He was hardly prepared for the doctor going so far as he had done—that this

disease might be drunk in with milk, and that if young children were in a low state of health that it might develop the disease in them. It went a long way to account for the excessive death rate among the poor children of our large towns. Speaking of the examinations, he said he was glad to hear they were becoming more and more severe. He believed a man was not properly educated unless he had a thorough general knowledge. He was totally opposed to those who went upon stilts about vivisection. He held that if these investigations were carried out in a careful and solemn manner, and if their object was not to inflict needless pain upon animals, Parliament was not justified in placing any disadvantage upon them. The diseases which inflicted animals were the diseases which inflicted human beings. He hoped the time was not far distant when Parliament would give them very much more scope in the question than they had at the present time.

Turning again to education, he said he thought it very desirable for all students, while they had a good knowledge of the English language, English literature and English science, that they should also be good linguists, so far as French and German were concerned, so that they might know what was going on in those countries; because, after all, so far as science was concerned, both France and Germany were ahead of England. He urged that languages should be a permanent feature in their curriculum. He asked them to join him in drinking prosperity to the North of England Veterinary Medical Association.

The CHAIRMAN, in reply, said he thought they must have all felt highly flattered by what the Sheriff had said concerning their profession and association. They tried to improve themselves in a quiet way, and they took to themselves the credit of having done something for veterinary politics. They proposed certain resolutions at one of their meetings some time ago, and these resolutions were forwarded to the Council of the Royal College, and they now stood as most important parts of the new charter. They also proposed a member for the Council, and he was elected, and was now President of the Royal College. They also nominated another member and he was elected, and was now their worthy representative. He agreed with the Sheriff when he asserted that vivisection was frequently carried too far. But there were no more humane men in the world than the veterinary surgeons. They tried to ease pain in every way they possibly could, and if they did go in for an experiment or two it was to benefit a great number of other animals. At the present time, if he was in doubt about an animal having glanders, and yet he was "balling" that animal daily and running great risk of his life, it was carried so far that he could not inject a little mallein as an experiment to see whether that animal was suffering from glanders or not. He thought those people carried those things too far.

W. ASHTON HANCOCK, *Hon. Sec.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE quarterly meeting of this Association was held at the Blackfriars Hotel, Manchester, on March 30th. The President, W. A. Taylor, Esq., occupied the chair. Present:—Messrs. James Laithwood, A. H. Darwell, J. T. Thompson, J. W. Bennett, G. Howe, J. H. Carter, J. A. Meredith, T. Greaves, E. Faulkner, — Sumner, W. Woods, Jos. Abson, S. Locke, T. Hopkin, R. Hughes, J. L. C. Jones, H. Ferguson, S. L. Buckley, and J. B. Wolstenholme.

Mr. Frank Garnett, M.R.C.V.S., Bowness, Windermere, was elected a member of the Association.

On the motion of Mr. T. HOPKIN, seconded by Mr. HUGHES, the best thanks of this Society were given to Messrs. Thomas Greaves and William Whittle, for their long and faithful services as representatives of this Association in the

Council of the Royal College of Veterinary Surgeons. (Carried unanimously.) It was also directed that the same be recorded on the minutes.

Mr. GREAVES, in reply, thanked the members for their appreciation of his services in the many past years. He had always considered it a high honour and a privilege. He thought it was better that younger men should now assume that duty.

The late Treasurer, Mr. HOPKIN, presented the balance-sheet of the Association for the last year; it was adopted.

The communications received relating to the British Institute of Preventive Medicine were then considered, and were further adjourned to the next meeting, pending the receipt of information as to certain particulars.

Mr. HOPKIN showed the lungs of a lion which had died of pneumonia, and detailed his efforts in treating the case, giving tincture of aconite and solution of carbonate of ammonia in the drinking water, as the stages of the case seemed to require; also the manner in which, by means of stable forks, they applied rugs wrung out of hot water to the chest.

Veterinary-Captain MEREDITH exhibited the skull of a horse, divided by longitudinal section, showing extensive disease of the sinuses on the left side. He also exhibited a number of interesting photographs illustrating cases of wry-neck in troop horses.

Mr. J. T. THOMPSON showed a portion of the small intestine, in which the coats were hypertrophied to such a degree that the bowel did not collapse, but maintained its calibre in a similar way to an artery. The cause of death had been rupture of a portion of bowel; there was no previous history of colic. He also related a very interesting case of hæmorrhoids in a horse, in which a loop of vessel 18 inches long, and another about 12 inches long, pear-shaped, each having a diameter of 3 to 4 inches in the thickest part, were hanging from the rectum and filled with blood. Having ligatured the peduncle, he removed them. The horse made a good recovery, the sloughs coming away in about a week after.

Mr. J. H. CARTER showed a number of bones and sections of the same, which he had obtained from the abattoir at Burnley. Extensive change had taken place in each, the nature of which had not been agreed on. A marked and constant feature was their colour, which was of a bronze hue, and pervaded every part of the bone. The gums and teeth were also tinged in like manner.

Mr. GEORGE HOWE related a case of thickened small intestine, similar to Mr. Thompson's case.

Mr. J. L. BUCKLEY showed a number of specimens—dry portions of intestine showing local lesions of swine fever in a remarkably distinct form.

Mr. J. B. WOLSTENHOLME showed microscopical sections of primary and secondary deposit of round-celled sarcoma from a dog, and a section of osteo-sarcoma from the mammary gland of a bitch.

JNO. B. WOLSTENHOLME, *Hon. Sec.*

ONTARIO VETERINARY COLLEGE.

THE closing exercises of this institution took place on March 25th. There was a large attendance of visitors in addition to the students, and addresses were delivered by prominent citizens. Professor Smith, the principal of the College, presided, and among those on the platform were Lieut.-Governor Kirkpatrick, Sir Casimir Gzowski, Hon. John Dryden (Minister of Agriculture), Dr. Ryerson, M.P.P., and others.

Dr. DUNCAN read the list of graduates and honour students, after which the chairman called upon the Lieut.-Governor for an address.

The Hon. Mr. KIRKPATRICK was warmly applauded by the students. He congratulated the principal on the success of the college, expressing his great

pleasure at seeing so many students from the other side of the line, who were admitted freely, no tariff being a bar to their presence. He referred to the importance of the cattle trade of the country, and the value to it of veterinary science, and was glad to see so many taking up the study.

Sir CASIMIR GZOWSKI spoke with great acceptance, referring gracefully to the continued success of the college, to the importance of the study of veterinary science, to the necessity of being always students, ever willing and anxious to learn, and commending to all present the aphorism, "*Experientia docet.*"

The Hon. Mr. DRYDEN, Minister of Agriculture, referred pleasantly to the fact that there was at least one institution good enough to draw a large number of students from the United States. This fact was forced upon him as he listened to the list of graduates just read out. Not only every portion of their fair Dominion, but almost every State in the Union was there represented. He was sure that the graduates were competent to deal not only with the diseases of horses, but of those of cattle and sheep as well, as these were of great importance.

Several other addresses were given, after which the prizes were distributed by the following gentlemen :—Lieut.-Governor Kirkpatrick, Dr. Peters, Mr. J. D. O'Neil, V.S., London ; Mayor Lloyd, V.S., Newmarket ; Dr. Duncan, Wm. Cowan, V.S., Galt ; Mr. John Akers, and Mr. Wm. Christie. The latter gave as one of the prizes a complete set of Darwin's works.

Mr. H. D. MARTIN, of Buffalo, a member of the graduating class, was called on, and presented a magnificent picture of the graduating class to Prof. Smith.

Dr. SMITH thanked the students for their gift, and spoke eloquently of the friendliness which had always existed between the teachers and taught, and especially of the class of 1892–93.

The list of graduates was a very long one, and included the names of nearly one hundred and fifty students, representing a most extensive extent of territory not only in Canada but also in the United States, some of them even hailing from England.

McGILL UNIVERSITY, MONTREAL.

THE Faculty of Comparative Medicine and Veterinary Science held its meeting of Students and their friends on March 30th, in the William Molson Hall, Montreal, to witness the conferring of the Degree of D.V.S. upon the graduating class of 1893. Mr. S. Finley presided, and accompanying him on the platform were Hon. H. G. Joly de Lotbiniere ; Prof. Johnson, vice-principal of the university ; Dr. McEachran, dean of the faculty of comparative medicine and veterinary science ; Rev. Dr. Cornish, Professors T. Wesley Mills, Moyse, Penhallow, Adami, Drs. M. C. Baker, Girdwood, Ruttan, Blackader, Fulton, Bryden, Mr. Justice Wertele ; Mr. J. W. Brackenridge, acting secretary of the university ; Mr. W. E. Deeks, and Mr. N. S. Blackwood.

The proceedings were opened with prayer by the Rev. Dr. Cornish, after which the faculty lists were submitted by Dean McEachran, who said that the duties of the session had been performed most earnestly both by the professors and the students, and considering the many drawbacks which the faculty laboured under, the progress had been most satisfactory. There was every confidence that one and all who were about to receive their degrees had earned them, and that they would be a credit to the faculty in the practice of their profession. He expressed regret at the illness of Sir William Dawson, but rejoiced that he would soon return to Montreal restored to health. He concluded by giving the members of the graduating class some sound, practical advice as to their conduct in practising their profession, urging them to

deal fairly and honestly with all men. He then read the sessional report, which showed that the number of students who attended the full course was 58, viz. :—from the United States, 18; Canada, 30; England, 1; Hawaiian Islands, 1.

The prizes and honours won by the students were then awarded, after which the Degree of D.V.S. was conferred upon fifteen students who had attended the three years' course, and had satisfied the examiners.

This was followed by Dr. W. S. PLASKETT delivering the valedictory, in which sound thought was judiciously mixed with sufficient lighter material to make the whole decidedly pleasant.

Prof. PENHALLOW impressed upon those who had just received their degrees the great responsibilities they had undertaken. It was quite probable that the learning they had acquired might enable them to diagnose and treat disease in a skilful and successful manner, but from those who had received such a training the world had a right to expect something more than mere work for pecuniary reward. It was only by persistent effort, wisely directed, that the standing of the profession could be advanced, and they had all learned enough in their course of study to know that they were only standing on the threshold of that great region of light which lay beyond. He spoke of the brutality which was often practised by drivers upon horses, and urged those about going forth to practise their profession to labour hard, by their counsel and example, to bring about a better state of things and to support those societies which had for their object the prevention of cruelty to animals. In conclusion he spoke of the pressing needs of the faculty as regarded more and better accommodation.

The Hon. H. G. JOLY DE LOTBINIERE said it was no use pretending to enable farmers to better their position unless everything possible was done to improve the instruction given in our veterinary colleges, so as to meet the requirements of the improved agriculture. The time was now passed when the farmer sold everything that his land produced; now he tried to return to the land what he received from it, and the more this new agriculture policy prevailed, the more important to the farmer became the vocation of the veterinary surgeon. He wished the members of the graduating class all success in their future career, and expressed the hope that before anything else they would endeavour to make for themselves a good name.

Prof. JOHNSON spoke of the prejudice which existed in some quarters against the faculty, because, as he thought, it was not generally known that it was a branch of the medical faculty, which, with its broad shoulders, took upon itself the responsibility of the faculty of comparative medicine and veterinary science. Looking at the history of other faculties and professions, there was good reason to hope that when this becomes properly known the prejudice would disappear.

This terminated the ceremony, and the gathering dispersed.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

AT the monthly council meeting held on April 12th, Sir John Thorold presented the recommendation of the committee that Mr. F. W. Garnett, M.R.C.V.S., of Windermere, be appointed the Society's Provincial Veterinary Surgeon for Westmoreland. It had been arranged that Professor McFadyean would shortly proceed to Northumberland in order to investigate the outbreak of louping-ill amongst sheep in that country. The committee had had under their careful consideration the question of abortion in cattle, and recommended that a letter be addressed to the President of the Board of Agriculture, asking the Board to undertake at the earliest possible moment an exhaustive inquiry into the nature and causes of this disease. They had prepared the

following memorandum on the subject, which they suggested should be sent to the Board of Agriculture for their information:—

"*Epizootic Abortion in Cattle.*

"Although there are no official statistics showing the losses caused by abortion in cattle, such losses have now become exceedingly serious, and they are very widely spread amongst the herds of the country. In a single outbreak of this disease, which occurred at Kirkby Overblow, in Yorkshire, in the year 1886, no less than 300 cases were recorded, of which not less than 200 occurred within a radius of two miles, and the estimated total loss to the owners of the aborting animals was £1,600. The cause of the affection has never yet been definitely ascertained, and, consequently, there is no degree of certainty attaching to any of the remedies that may be applied. To show the difference of opinion which prevails as to the nature of the disease, it is only necessary to mention some of the various causes which have been assigned to it, such as ergoted grasses, unsuitable food, impure water, 'sympathy,' bad smells, disease in the bull, tendency to fatten, etc. That the disease is either contagious or infectious, practical men entertain no doubt, but the question as to the means whereby the contagion or infection is communicated still remains unsolved.

"In 1887, an inquiry was conducted under the auspices of the Highland and Agricultural Society by Dr. Sims Woodhead, Professor McFadyean, and Dr. A. P. Aitken, the results of which were published in that Society's transactions for 1887 and 1889. The inquiry showed that the disease was becoming increasingly prevalent throughout the length and breadth of Scotland, and that it caused a great annual loss to cattle breeders. As a result of experiments which were carried on in connection with this inquiry, five distinct organisms were stated to have been separated from vaginal and uterine discharges. The experiments, however, stopped at this stage, and the point as to whether such organisms were capable of producing the disease in other cows remained undetermined.

"The necessity of further investigations into the causation of the disease, with a view of discovering remedies of a reliable and efficacious kind, is therefore apparent. Such investigations ought to be directed in the first place to discovering whether any structural alteration or abnormality in the womb calf, or fœtal membranes is present in cases of abortion. This cannot be ascertained except by making a *post-mortem* examination of both cow and fœtus in a considerable number of cases, say twenty. For this purpose it would be essential to have the cows killed and examined immediately, or, at most, within a few hours after the act of abortion. The inquiry ought to embrace experiments planned so as to prove whether the disease is contagious or infectious. In order to throw light upon this point, it would be necessary to stall together, in healthy premises, aborted cows and cows bought from stocks known to be free from abortion, and to use other likely means of infecting cows on the assumption that the disease is thus transmissible.

"Unless the inquiry can be commenced early in August next, it will necessarily be delayed for another year; and in view of the great importance of this matter to the agricultural interests of the United Kingdom, the Council of the Royal Agricultural Society strongly urge the Board of Agriculture to undertake an exhaustive inquiry into the subject at the earliest possible moment.

"Signed on behalf of the Veterinary Committee,
"J. H. THOROLD, Chairman.

"Royal Agricultural Society of England,
"April 11th, 1893."

Sir JOHN THOROLD observed that it was very important that steps should be taken to deal with the disease of abortion in cattle, which, as the Council were aware, occasioned every year great losses amongst stockowners in this country, and had lately increased to a very serious extent. The Veterinary Committee considered that the time had arrived when definite measures should be taken to inquire into the nature and causes of the disease, with a view to the application of effectual remedies against it. They felt, therefore, that this matter should be brought strongly under the notice of the Board of Agriculture, and that the extreme importance of an exhaustive inquiry into the nature and causes of the disease being undertaken at the earliest possible moment should be urged upon the Government. If such inquiry could not be commenced early in August next, it must necessarily be postponed for another year. The Veterinary Committee had, therefore, prepared a statement showing what had previously been done in regard to this matter, and the lines upon which, in their opinion, the inquiry should proceed, and they thought that this might usefully be sent to the Board with a covering letter, to be signed by the President of the Society. They had reason to believe that the inquiry they suggested had the sympathy of the President of the Board of Agriculture, and they hoped he might be able to secure the carrying out of the investigations they had in view.

Sir JOHN THOROLD also presented the following report from Professor Brown :—

"*Pleuro-pneumonia.*—During the first three months of this year no fresh outbreak of pleuro-pneumonia was reported in Great Britain, nor was any case of the disease discovered, and no cattle were slaughtered in consequence of having been exposed to infection. There were nineteen suspected cattle slaughtered and found on post-mortem examination free from the disease. In the corresponding period of 1892, 61 diseased, 652 contact, and 56 suspected cattle were slaughtered. In 1891 there were in the first quarter 168 diseased, 2,075 contact, and 58 suspected cattle slaughtered. Since the returns for the week ended April 1st were made up, an outbreak has been reported in Forfarshire, in which one diseased animal and 46 healthy in-contact have been slaughtered.

"*Swine Fever.*—During the first quarter of the present year there have been 561 fresh outbreaks of this disease reported, and 2,735 pigs attacked. In the corresponding periods of the three preceding years, the returns in 1892 were 412 outbreaks and 2,625 attacked; 1891, 884 outbreaks, 5,365 attacked; 1890, 690 outbreaks, 3,891 attacked.

"*Anthrax.*—This disease has been much more prevalent in the present year than in any of the three preceding ones. The outbreaks this year have been 119, as compared with 65 in the corresponding period of 1892, 53 in 1891, and 43 in 1890. The animals attacked have this year been 284, as compared with 118 in 1892, 106 in 1891, and 69 in 1890.

"*Glanders, including Farcy.*—There have been reported to the Board of Agriculture this year 378 outbreaks and 652 horses attacked. In the corresponding period of last year there were 385 outbreaks and 710 horses attacked.

"*Rabies.*—This disease is, unfortunately, again increasing at a very rapid rate. In the first quarter of this year there have been 19 cases, as compared with two last year in the same period.

"*Foot-and-Mouth Disease.*—The outbreak of this disease which occurred at Guestling, near Hastings, in February has now died out, without having spread beyond the farm buildings in which it was first discovered. In the first 13 weeks of this year there have been two outbreaks of foot-and-mouth disease and 30 animals attacked, whereas last year in the corresponding period there were 59 outbreaks and 2,355 animals attacked."

The PRESIDENT said he did not know what the feeling of the Council might be with regard to rabies, as the present muzzling regulations were very tiresome, and a great nuisance. The only practical remedy appeared to be a general muzzling Order throughout the country for a whole year, and the prevention of the importation of dogs from abroad. The present system of partial muzzling was absolutely useless, and gave a great deal of annoyance to a vast number of people.

Sir MATTHEW RIDLEY asked whether Professor Brown could inform them in what counties the reported increase in cases of rabies had occurred.

Professor BROWN, in reply, stated that according to the weekly returns for the first quarter of the year the cases were as follows:—In the week ended January 7th six cases—viz., one in Lancashire, two in Yorkshire (N.R.), three in Lanarkshire; January 28th, two cases in Cheshire and Lancashire; February 4th, one case in Lancashire; February 18th, one case in Linlithgow; February 25th, one case in Lanarkshire; March 4th, one case in Lanarkshire; March 11th, two cases in the county of London; March 25th, three cases, one each in the counties of London, Dumbarton, and Renfrew; April 1st, two cases in the counties of Middlesex (ex London) and Lancaster.

THE FELLOWSHIP DEGREE OF THE R.C.V.S.

AT an examination for the above degree held on April 26th, the following members underwent the qualifying examination and were passed: Veterinary-Major Glover, J. B. Wolstenholme, Veterinary-Lieutenant Meredith, R. Hughes, G. H. Gibbings, J. W. Crowhurst, R. Roberts, F. Warren, J. Pollock, W. B. Nelder, W. Shipley, Junior, T. V. Pettifer.

Jurisprudence.

MARYLEBONE POLICE COURT.—Before Mr. Plowden on the 25th March, G. S. Palmer, of Loudoun Mews, Loudoun Road, N.W., was summoned at the instance of the Royal College of Veterinary Surgeons, for displaying the words "Veterinary Shoeing Forge" outside his premises.

Mr. THATCHER conducted the prosecution on behalf of the College, and after reading the 17th section of the Act, said that the defendant displayed the words "Veterinary Shoeing Forge" outside his establishment, and that according to the case of the R.C.V.S. *v.* Robinson that constituted an offence within the meaning of the section.

Mr. PLOWDEN remarked that the two cases seemed quite similar.

Mr. THATCHER said they were on all fours, and that the College had done everything in its power to give as much publicity to the decision as possible, and that no prosecutions were instituted without a cautionary notice being first sent to the offender, and a fair time allowed for him to comply with it.

The usual formal evidence was then put in that the defendant was not on the register and that the proceedings were authorised by the Council.

Mr. WEDLAKE gave evidence bearing out the opening statement, and in cross-examination denied that the words could only be seen by somebody who went on purpose to look for them, but on the contrary they could be distinctly seen at a considerable distance.

The defendant admitted that he had received the notice from the College, and said he had endeavoured to comply with it by having a coat of paint put over the word "Veterinary."

Mr. PLOWDEN said that he had better go back and put three coats over it,

and if he came there again he should deal severely with him. He found him guilty of the present offence, and fined him 20s. and costs.

On April 17th, before Mr. Fenwick, at the North London Police-court, James McIntosh, of Flowers Mews, Archway Road, Upper Holloway, was summoned, at the instance of the Royal College of Veterinary Surgeons, for an infringement of the 17th section of the Veterinary Surgeons' Act.

Mr. THATCHER conducted the prosecution on behalf of the college, and stated that defendant displayed a board on his premises with the words :—

"J. McIntosh,
"Vetenary Shoeing Forge,
"Smith's work in all its Branches."

He desired to call the magistrate's attention to the fact that the misspelt word "vetenary" was crossed through with a thin line, so that the defendant might possibly contend that he had complied with the letter of the warning he had received from the college. He quoted the case of the R. C. V. S. *v.* Robinson, 61 Law Journal Reports, M. C. 146, and said that if the magistrate was satisfied that the striking out of the word was a mere colourable evasion a conviction must follow. He put in the register and the authority of the college to prosecute, and called James Aldous as a witness, who deposed to the facts as stated in the opening, and, in answer to the magistrate, said that the board was about eight feet long and about two feet wide, and was placed on the top of the house, so that if it was looked at in one direction the crossing out of the word could be seen, but not if looked at in another. He thought the letters of the word "vetenary" were about nine inches long, and that the crossing out line was about two inches wide.

The defendant said that he had received a notice from the college, and thought that by placing the line as he did he was complying with all that was required, and he said that the line was three inches wide, and not two, as stated by the witness. He also said that he had a duly qualified veterinary surgeon in daily attendance at the premises, and he thought that would entitle him to put up the word.

Mr. FENWICK : That will not do. The case brought to my attention is clear about that. If you put up the word the judges say it means you, and that you are not entitled to do it.

The defendant said he did not wish to do anything against the law, and if the college wanted anything more he was willing to do it.

Mr. THATCHER stated that the college only wished the Act to be carried out, and that if defendant would undertake to cover the word entirely with three thick coats of good paint, he would be satisfied with a nominal penalty.

Mr. FENWICK : Very well, I shall adjourn the case for a fortnight. You hear what the solicitor says, and you must carry it out. No doubt the college will send up someone to see that it has been done, and you will all attend here this day fortnight.

Notes and News.

DEATH OF A VALUABLE STALLION.—The famous trotting stallion Lobasco, for which £20,000 were refused last year, has died in Nebraska.

BACTERIOLOGY IN QUEENSLAND.—The Queensland Government has decided to establish a bacteriological and pathological institute in Brisbane, for the special study of diseases peculiar to stock in the colony, a question of peculiar importance to the pastoral industry of Queensland.

A PROLIFIC EWE AND PROGENY.—A Leicester ewe belonging to Mr. Gray, Knowes, Deskford, dropped four lambs on April 2nd. Last year the same

ewe dropped a similar number, and before she went into Mr. Gray's possession, being purchased from Mr. William Hendry, Keith, she had three lambs. Three of the ewe's last year's family are in lamb.

CATTLE PATHOLOGY IN FRANCE.—The French government has decided to institute a chair of bovine pathology in each of its three veterinary schools, the funds necessary for the purpose—18,000 francs (£720) for each school—having been voted; so that it is probable these chairs will be inaugurated this year.

VETERINARY MEDICINE IN BUCHAREST.—The veterinary school for Roumania, situated in the capital, Bucharest, is about to be re-organised, it being proposed to annex it to the Faculty of Medicine, and its professors placed on the same footing as those of that institution. Twelve chairs will be established in the school, to which twelve professors, and as many assistants, will be appointed.

CATTLE DISEASES IN GERMANY.—At Kiel there were slaughtered at the public slaughter-house during the month of February, 1893, 122 oxen, 59 heavy bulls, 240 cows, 116 fat heifers, 51 light bulls, 62 strong bulls under two years, 517 fat calves, 1,606 pigs, 486 sheep, 140 lambs, 595 calves, and 57 horses, making a total of 4,051 animals. Of these, 2 bulls, 6 cows, 3 heifers, 1 calf, and 1 horse were tuberculous. Of organs and parts of animals, 270 lungs and 17 livers of cattle, 88 pigs' lungs and 35 pigs' livers were also affected with the disease.

BUTTER.—Butter, which is almost indispensable to the meal nowadays, was formerly used solely as an ointment. Herodotus, a Greek historian, is the first writer who mentions butter, five hundred years before Christ. The Spartans treated it very much the same as we do cold cream or vaseline, and Plutarch tells how a hostess was sickened at the sight of one of her visitors, a Spartan, who was saturated in butter. The Scythians introduced the article to the Greeks, and the Germans showed the Romans how to make it. But the latter did not use it for food; they, like the Spartans, anointed their bodies with it.

FEMALE VETERINARY SURGEONS.—When women began to invade the medical profession, veterinary surgeons declared that their vocation was safe from such intrusion, as the weaker sex were not adapted for such an occupation. It was not long, however, before there was evidence forthcoming that ladies were not of this opinion, and that the veterinary profession was no more repellent to them than that of medicine. In 1889, a Mdlle. Kruszewska successfully passed the necessary examinations for the diploma of Veterinary Surgeon at the Zurich Veterinary School, and now we learn that another lady, Mdlle. Dabrowilskai, after having terminated her studies at the same Veterinary School, has been recently admitted by the University of Charkow (Russia) to the State Examination, and has also been appointed a district Veterinary Surgeon in Southern Russia.

ANTHRAX FROM HORSE-HAIR.—M. Chauveau publishes in the March number of the *Annales d'Hygiène Publique et de Médecine Légale* a report of an epidemic of anthrax which broke out in a beershop at Pont-de-Marq, Lille. Fifteen people were employed, and in the space of four months seven were attacked; one only recovered. The epidemic is attributed to horse manes imported from China. Previous epidemics have been attributed to the same cause. M. Chauveau, however, thinks that in the present instance this explanation is a mere supposition. Anthrax is not rare in the district, and is seen often enough in the horse to warrant the belief that their manes are the origin of the epidemic. Whatever may be the cause of this particular outbreak, it is certain that horses' manes before manipulation should be disinfected. At Ghent they are immersed in boiling water or an antiseptic solution of 58° or 60° Centigrade.

A DANGEROUS DISEASE OF PARROTS.—About this time last year an epidemic broke out, followed by several deaths, which was supposed to have been caused by parrots sent from Buenos Ayres. At a recent meeting of the Conseil d'Hygiène, M. Dujardin-Beaumetz stated that he was less confident as to the origin of the epidemic. The same disease, slightly modified in some points, has reappeared. Instead of the characters of pneumonia it presents those of a typhoid affection. Four cases, with three deaths, have occurred at the Salpêtrière. The three patients who died had been in contact with sick parrots (not imported from Buenos Ayres), and gave them food from their mouths. Fluid expressed from their lungs given to other animals caused death. These cases serve to show how dangerous it is to feed birds by holding the morsel between the lips for them to take. M. Nocard has discovered in the spinal marrow of the parrots supposed to have communicated the disease to the three patients, a microbe which is possibly the contagious element of the disease.

GLANDERS AND FARCY IN LONDON.—The London County Council is taking steps to carry out the glanders and farcy Order of last year, and has prepared regulations which took effect from April 1st. They relate to the movement and marking of animals diseased with or suspected of glanders or farcy; as to the removal of fodder, litter, etc.; as to cleansing and disinfecting in cases of glanders or farcy; as to prohibiting or regulating the removal of any carcase or for securing the destruction of the same. A wise step has been the preparation of notices, detailing the symptoms of glanders and farcy, for distribution amongst horse owners and persons dealing with horses. Police constables are to be placed at the entrance of premises where it is known there are cases of glanders or farcy, and the premises are to be placarded in accordance with the Order. These measures ought to have some effect in reducing the disease in London. Anybody failing to give notice of a case of glanders or farcy is liable to a penalty of £20. As the disease is one which can be communicated to man, and is almost always fatal in man, the new regulations are not at all too stringent.

THE MEAT SUPPLY OF LONDON.—The annual report of the Central and Cattle Markets Committee gives some interesting figures, which show the enormous supplies of provisions annually consumed in London. The figures relating to the meat, poultry, and provision section indicate an increase in both rent and toll accounts, the weight of the deliveries during the year 1892 exceeding that of any previous year by upwards of 15,560 tons, being an increase of 152 per cent. upon deliveries of 1869 (the year of business at the Meat Market), the total for last year being 323,088 tons 6 cwt. This total is made up as follows:—Country killed meat, 117,852 tons; town killed, 64,829 tons; general and foreign meat and produce, 30,055 tons; American killed fresh meat, 69,495 tons; Australian and New Zealand killed fresh meat, 37,819 tons. The deliveries of the general foreign produce obtained from the Continent of Europe have increased 20 per cent., owing to the restrictions upon the importation of live cattle and the growth of the supplies of Russian poultry and game, while a falling off of 7 per cent. in the weights received from Australia and New Zealand has been fully compensated for by an increase of 19½ per cent. in the supplies of American killed meat. The total number of animals received at the Metropolitan Cattle Market in 1890 was 882,760; in 1891, 991,099; and last year, 939,442, made up as follows:—Beasts, 103,432; sheep, 815,950; calves, 5,793; pigs, 4,216; and other animals, 10,051. In 1890 the number of animals landed at the Foreign Cattle Market was 306,878; 1891, 350,500; and last year, 141,130, made up as follows:—Beasts, 140,136; sheep, 976; and calves, 18.

THE RINDERPEST IN RUSSIA.—Telegraphing from St. Petersburg the *Times* correspondent says:—"The Ataman of the Don Cossacks has issued

and published a long circular addressed to the Cossacks on the subject of disturbances and opposition to the authorities in carrying out appointed measures for arresting the spread of the cattle plague which has broken out in the neighbourhood of Novo Tcherkask. Some time ago regulations were made for the compulsory slaughter of all diseased cattle, as well as of animals in contact with those affected, and, in spite of the promise of the Government to pay to the owners the full estimated value of beasts thus destroyed, a strong and active opposition, which has necessitated the interference of troops, was organised by a number of Cossacks in the district. Though details are wanting, it is evident from the circular that the revolt was rather serious. It would be interesting to know the manner and the amount of compensation received by the owners of slaughtered cattle, as this seems to have been at the bottom of the disturbance. The cattle plague appears to be very bad all over the Steppes stretching to the Caucasus. The Governor of Ekaterinoslav, a province adjoining that of the Don, has also issued a severe order on the same subject. In this document the rural police and administrators are enjoined to take energetic measures against the spread of the epizootic contagion by discovering the diseased cattle that are kept concealed by the inhabitants. In spite of the strict prohibition of all fairs in the district, exemption from this order is constantly being solicited. The police are now instructed to prevent the holding of such local fairs, and no cattle are to be allowed to be employed in field labour. After the terrible losses of horses and cattle suffered by the rural population during last year's famine, it is no wonder that such regulations are causing discontent. Last year we had riot and disorder in consequent of the cholera regulations; this year cattle plague precautions seem to be producing the same result."

Correspondence.

PLAGIARISM EXTRAORDINARY.

SIR,—In your issue of March, 1893, is a communication on "A Bacterial Disease: The so-called Corn Stalk Disease," which on its face looks like a perfectly honest and honourable article, and as the work of the individual who wrote it. Now, I would be the last person in the world to try and detract from the honourable reputation of any man, but the fact is that every particle of the work there recorded, except the manual labour, was done by me, and the notes of the work there published were taken from this laboratory. If you will turn to my late Bulletin on the Corn-Stalk Disease, page 59, you will see the notes of the autopsy on the calf in almost the identical words; I dictated them to the party in question: and on page 61 the note on the autopsy of the hog fed on the organs of the calf, which for some reason were omitted. The story is simply this. It has always been my endeavour to do all I could to stimulate ambition in young students, as you yourself, Geo. A. Banham, and many others can testify. My purpose in doing so has been to aid young veterinarians to become of some scientific use to humanity. I have taken them into my home and into my laboratory, and allowed them the unusual privilege of using my own notes and publishing my work long in advance of myself. In two instances—those of Dr. Thomas Bowhill and Dr. J. Wilson-Barker—I have allowed them to style themselves "assistants" in this laboratory, though not under pay, being assistants by courtesy. Dr. Barker is now regularly assistant here, and should I leave will probably be entrusted with this work. There is some strange pestiferous disease in our life in America. I do not know what to call it exactly. It may be struggle for existence, it may be laziness—I don't know what it is, but it causes the most wonderful disregard of manly honour. Suffice it to say, that every American

whom I have thus aided has turned his back on me and gone over to my enemies in the Bureau of Animal Industry. When every foreigner, and to the credit of your country, three of them, one the Englishmen whom I have named, has proved himself entitled to the proudest of all distinctions, *a man*. Now as to the author of this paper. It so happened that, for various reasons, the students of the Chicago Veterinary College presented me with an elegant cane during my lectures in the autumn of 1891, which made me unusually good-natured and unsuspicious. Shortly afterwards the person in question came to me and expressed a desire to buy a microscope and to study, and he assured me that he had money enough to maintain himself for six months with me. I have been especially anxious to have a number of competent workers in the experiment stations here, and knew I could place such. On the person agreeing to come with me, I allowed him to have a new microscope, which I did not need, and which cost me over $200, and which I had given the refusal to another who had abundance of money for $300; I did this simply because he had been a student of mine. He came to me January 1st, 1892, as said, to stay six months. While here he interested himself in disparaging me all he could among the citizens of this place, but at the same time talking exactly the contrary to my face. I told him I would do all I could for him, and could not have tried to do more for my own child. He knew nothing when he came here and but little more when he left; he is not an investigator. At that time we were working on the "Corn-Stalk Disease," and I took the work from my regular assistant (then Dr. F. H. Brewer, also an Englishman), and allowed this person to do it; arranging everything, and dictating and controlling all results. I did intend to publish it in his name as a short bulletin from this laboratory, and if he showed competency to get him an appointment. But after being here two months, in my absence he went away, taking notes, cultures, etc., all our property and not his, leaving a short note that he was called away for "family reasons." Soon after he went into the employ of the Bureau of Animal Industry, and from the day he left did nothing but villify me in every direction. It may be a left-handed compliment that the Government seeks to employ men who have been with me, but it might have taken more honourable means of doing so; for I think this person was in communication with the Government officials the whole time he was here. I simply write this that British Veterinarians may have some idea of the terribly disagreeable conditions under which I have pursued my labours in the United States.

FRANK S. BILLINGS.
Director of the Patho-Biological Laboratory
of the Nebraska State University.

Lincoln, Nebraska, *March 18th.*

THE EXAMINATIONS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

SIR,—In the Regulations for the Professional Examinations of the Royal College of Veterinary Surgeons, which commence on page 62 of the Veterinary Register for 1892, the 10th Regulation reads as follows: "The President will be expected to attend the Examinations once at least in the year, at London, Edinburgh, and Glasgow." I should like to know whether the present President or his predecessor conformed to that regulation, and if not, why not? Delegates have recently been appointed to perform this duty at heavy cost to the profession, but for many years it was carried out by the President as one of his special functions, and I think it would have been better had it continued so.

SCRUTATOR.

THE SUPPRESSION OF CONTAGIOUS DISEASES.

DEAR SIR,—As you say in the editorial in the March number of your journal, the "stamping out" system, when it can be applied, is undoubtedly the best, but of course the least scientific. Unfortunately, the "stamping out" system cannot be applied to all infectious diseases; that fact is well known. Anybody who knows the life history of the Anthrax bacillus, would not for a moment grant that compulsory slaughter of every living animal in Great Britain would exterminate Anthrax. I will not go beyond the diseases mentioned in your article. Contagious Pleuro-pneumonia, Foot-and-Mouth Disease, Cattle Plague, Glanders, Tuberculosis, and Rabies, all belong to the endogenous class of disease, and can be "stamped out." Tuberculosis is a possibly doubtful one, from the simple fact that so much Tuberculosis exists among human beings; making it possible, if not probable, that animals may become affected from them. It has, I think one can safely say, been established that, although the tubercle bacillus does not multiply outside the animal economy, yet it may in a dry state exist, and does become dangerous when in that state.

Of Rabies little is known, though volumes have been written upon it, The Glanders bacillus is known not to live long external to the body. Of the other three diseases, from a bacteriological standpoint little is known, but from the clinical side they are unquestionably endogenous diseases.

Regarding Swine Fever, Anthrax, and Symptomatic Anthrax, they are exogenous diseases—a fact well established by nearly every observer, both scientific and practical, and no amount of "stamping out" will rid the country of them. Inoculation, sooner or later (unless other means are discovered), will have to be resorted to. Of course, a vast amount of work has to be done on this side of the question, and perhaps I may say that many of the present objections will have to be removed before inoculation will become "universal."

So far as contagious Foot-rot in sheep is concerned, I know so so little that I have left it for some of my readers to place it in one or other of the above divisions.

Disinfection is very useful, but in exogenous diseases it cannot be relied upon. A nice process it would be to attempt to disinfect two or three acres of land with piggeries on, after swine fever had been raging there! The men engaged in the process would carry on their boots and implements the germs to be planted in other parts of the farm. Fortunately, the telluric conditions are not always suitable for the development of the germs, or even if they are, there is the chance that in the changed locality they may become non-virulent, or in other cases more virulent. In this way only can we account for the vast difference which exists between outbreaks of not only swine fever, but many other diseases. Inoculation with the germ itself, I hope will soon be superseded by other processes, but that can only be done when bacteriological chemistry and blood serum therapeutics are better understood. More attention is wanted in the life history of the germs, and not until their life history is thoroughly known can a hard and fast line be drawn between ex- and endogenous diseases.

The term "contagious," in the light of our present knowledge, is vague and indefinite, and a misunderstood term; and I think the term *exogenous* and *endogenous* for all "infectious" diseases is much more definite, and helps one to at once find out what kind of disease we are dealing with.

In concluding this letter, I would like to make one further remark, and that is, why do we not have reports from the bacteriological laboratory at the Royal Veterinary College? Is it only for teaching, or is it for investigating diseases as well? Some valuable work ought to be put out from such a fine laboratory, which would be of immense value to the English-speaking veterinary surgeons all over the world. There are plenty of diseases to be

investigated among all the domestic animals, and I hope the Royal Veterinary College will try and enlighten us upon some of them.

Apologizing for intruding so much upon your valuable journal.

State University, Nebraska, U.S.A. J. WILSON-BARKER, M.R.C.V.S.
March 20th.

P.S.—I am happy to be able to inform your readers that Dr. Billings will shortly have published (by Jenkin, New York), a most valuable work on "Infection and Infectious Diseases." I have been fortunate enough to read through the manuscript, and feel confident that it will throw much light on the subject.

VETERINARY SURGERY *VERSUS* CRUELTY TO ANIMALS.

SIR,—Having been thinking the matter over lately in connection with some cases of cruelty to animals brought under my notice, such as unqualified persons docking, dishorning, and castrating animals, I think it would be right, just, and remunerative to all veterinary surgeons if they would aid the Prevention of the Cruelty to Animals Society to prevent any such persons performing operations which clearly come under the veterinary surgeon's duty to perform, and that of no other person, no matter how well adapted or clever he may be in any particular operation. I think less would be heard in the law courts, and less discussions on the relative value or necessity of these operations. I believe all such operatioms to be necessary for good reasons and facts, except, perhaps, in cases of docking, when animals are used in hot climates, &c. Yet in domestication and for domestic purposes, all three operations are alike necessary, and many others also, to make the lower animals serviceable to man. From another and different standpoint, which is that the properly-qualified veterinary surgeon alone is able, owing to his anatomical and surgical knowledge, to perform these operations (though, perhaps, not in all cases successfully) in a proper manner, and with as little possible pain to the animal; the animal is also generally better treated and cared for in these cases, whereas in the other case the gelder and docker does his work very roughly, generally gets paid, and never requires, nor does look or hear whether the animal is attended afterwards or not. This should undoubtedly be stopped at once by legislation, either from the Royal College of Veterinary Surgeons or the Cruelty to Animals Society, backed by the former body, and a law passed stating that all operations on animals are to be performed by a properly-qualified veterinary surgeon; if not, and done by an unqualified person, to be considered cruelty, and the offender to be prevented from continuing to do so, and liable to a penalty for every such offence. This, I think, would make veterinary surgeons practical by practice, and, therefore, more efficient, and would give them a much better standing, both financially and otherwise, and in districts in which a veterinary surgeon at present has a rather scanty living, would become remunerative. This cause, in my opinion, is at the root of all evil, as veterinary surgeons are very slow in taking action against unqualified farriers, &c., owing to their false position in a particular district. They can do and will do a veterinary surgeon a great deal of harm, as people in this age of enlightenment seem to be pretty easily advised, even in spite of the great amount of learning that is supposed to have banished superstition. Some may state that shepherds, &c., will dock and castrate lambs; well, I say that is wrong, as there are few people more superstitious (although sometimes very practical) than shepherds. Yet it is clearly out of their sphere, and if a veterinary surgeon could not be supported where sheep are, a travelling one could—he who would get so much per head for each sheep operated upon, and all shepherds and others to pay attention to the sheep in other respects. The same with other animals. In fact, it is wonderful in this nineteenth century to see coachmen, byre-men, &c., going the length

they do with enlightened men and even veterinary surgeons. All this should and will be stopped, and the sooner the better. Besides operations, all medicines, &c., known to be administered by unqualified men, and causing unnecessary pain or inconvenience to animals—unless in cases of emergency and no veterinary surgeon to be had—and not under veterinary directions, should be stopped. Hoping, at least, the first part of this note may be taken up by the Royal College of Veterinary Surgeons.

J. D. POTTIE, M.R.C.V.S.

GREENOCK, *April 19th.*

A CORRECTION.

Through an oversight, which we much regret, the name of the writer of the article on Foreign Matters in the Facial Sinuses of the Horse which appeared in last month's Journal, was omitted. The article was from the pen of our esteemed correspondent, Mr. T. B. Goodall, F.R.C.V.S., Christchurch, Hants.

A correspondent is desirous of learning the chief diagnostic symptoms of Anthrax and Black Quarter. We think we cannot do better than refer to a good work on veterinary medicine, such as the last edition of Professor Williams' treatise on the Principles and Practice of Veterinary Medicine, in which the characteristics of both maladies are fully detailed.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from Dr. F. S. Billings, Lincoln, Nebraska, U.S.A.; O. C. Bradley, Edinburgh; H. G. Rogers, London; J. S. Hurndall, London; J. Wilson Barker, Nebraska; J. M. Crawford, Yarm-on-Tees; Jeyes' Sanitary Compound Company; Professor J. T. Duncan, Toronto; L. Desmond, Warnambool, Australia; H. W. Dawes, West Bromwich; Dr. Salmon, Washington U.S.A.; G. Thatcher, London; G. Beattie, Langside: E Wallis Hoare, Cork; "An Exile"; "Scrutator"; J. D. Pottie, Greenock; Veterinary-Captain J. Mills, Bombay; J. B. Wolstenholme, Manchester; W. Awde, Stockton-on-Tees.

BOOKS AND PAMPHLETS: *Professor W. Williams*, The Principles and Practice of Veterinary Medicine, Seventh Edition; *Professor A. Liautard, M.D.*, Manual of Operative Veterinary Surgery; *Farmer Miles*, Animal Castration, Spaying and After-Treatment; *Drs. D. E. Salmon, T. Smith, and F. L. Kilborne*, Investigations into the Nature, Causation, and Prevention of Texas or Southern Cattle Fever; *J. Irvine Lupton*, Horses Sound and Unsound; *E. A. A. Grange*, Conformation of the Horse Governing Selection; Bulletin des Séances de la Société Nationale d'Agriculture de France; Procès-Verbal de l'Académie Royale de Médecine de Belgique; *F. S. Billings*, Southern Cattle Plague; Encyklopädie der Gesammten Thierheilkunde und Thierzucht.

JOURNALS, ETC.: *Journal of the Royal Agricultural Society; Bell's Weekly Messenger; American Veterinary Review; Deutsche Zeitschrift für Thiermedicin; Clinica Veterinaria; Archiv für Wissenschaftliche und Praktische Thierheilkunde; Maryland Farmer; Journal of Comparative Medicine and Veterinary Archives; Thierarzt; Moderno Zooiatro; Ceylon Sporting Gazette; Recueil de Med. Vétérinaire; British Medical Journal; Revue Vétérinaire: Journal de Méd. Vétérinaire et de Zootechnie; Repertorium der Tierheilkunde: Lancet; Echo Vétérinaire; Annales de Méd. Vétérinaire; Presse Vétérinaire; Edinburgh Medical Journal; Baily's Magazine; Wochenschrift fur Thiermedicin und Thierheilkunde; Live Stock Journal; Mark Lane Express.*

NEWSPAPERS: *Madras Mail; Madras Times; Montreal Gazette; Manchester Guardian; New York Spirit of the Times.*